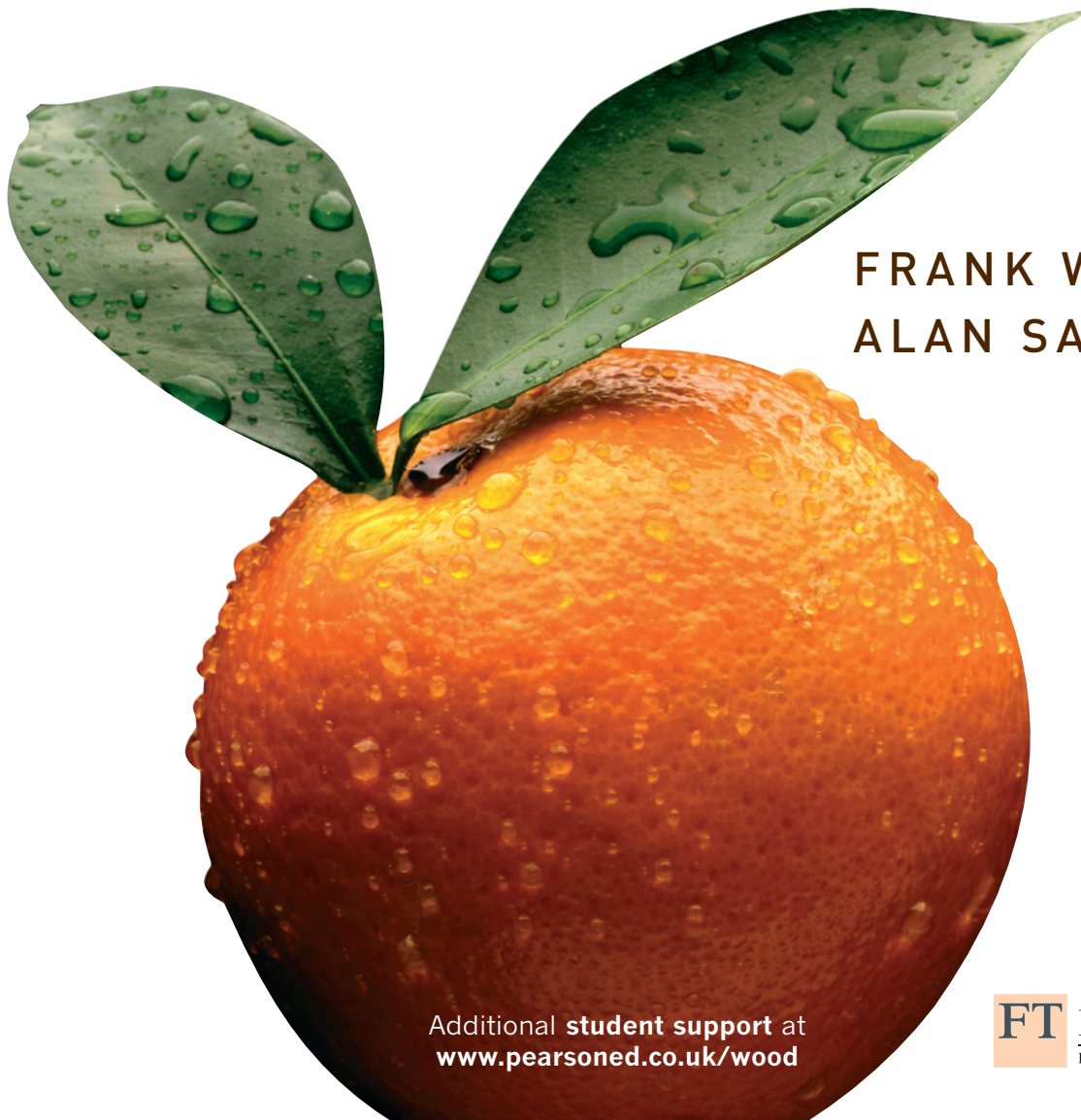


FRANK WOOD'S

# 2 business accounting

TENTH EDITION

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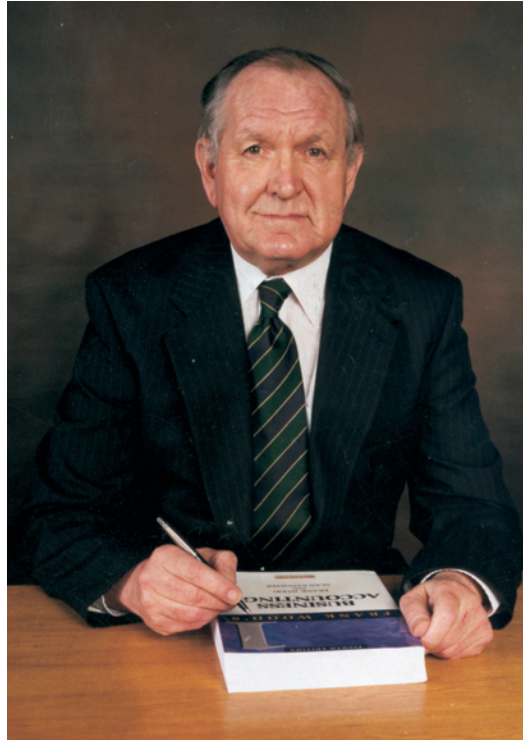
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Frank Wood  
1926-2000

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# 2 business accounting

TENTH EDITION

**FRANK WOOD** BSc (Econ), FCA

and

**ALAN SANGSTER** BA, MSc, Cert TESOL, CA

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# Guided tour of the book

## Part opening

**part**  
**5**

### ISSUES IN FINANCIAL REPORTING



**Introduction**

This part looks at the theories upon which accounting practice is based, considers issues affecting accounting and financial reporting and reviews the place of accounting information in the context of the environment in which business entities operate.

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**chapter**  
**4**

### The issue of shares and debentures

**Learning objectives**

After you have studied this chapter, you should be able to:

- explain the terminology relating to the issue of shares and debentures
- describe the steps in the process of issuing shares and debentures
- record the accounting entries relating to the issue of shares and debentures
- make the necessary entries in the ledger accounts when shares are forfeited

**Introduction**

In this chapter, you'll learn about the alternatives available to companies when they wish to issue shares and of the various entries to be made in the ledger accounts. You'll learn about how to record the issue of shares at a price greater than their nominal value and how to record the issue of shares to existing shareholders, rather than to non-shareholders wishing to purchase them. You will also learn about the difference in accounting entries made when debentures (a form of loan capital) rather than shares, are issued.

**4.1 The issue of shares**

The cost of issuing shares can be very high. As a result, the number of shares issued must be sufficient to ensure the cost of doing so is relatively insignificant compared to the amounts received. When shares are issued, they may be payable, either (a) immediately on application, or (b) by instalments. Issues of shares may take place on the following terms connected with the price of the shares:

- Shares issued at par. This would mean that a share of £1 nominal value would be issued for £1 each.
- Shares issued at a premium. In this case a share of £1 nominal value would be issued for more than £1 each, say for £1.50 each.

**Note:** At one time, shares could be issued at a discount. Thus, shares each of £5 nominal value might have been issued for £3 each. However, this was expressly forbidden in the Companies Act 1985.

**Activity 4.1** Why do you think companies may wish to issue shares at a discount and how do you think companies avoid being in this position?

55

**Learning objectives** outline what you will need to have learned by the end of the chapter.

A wide range of **exhibits** offer clear examples of accounting practice and methodology.

Chapter 36 • Absorption and marginal costing

**36.12 Using marginal costs**

Let's test what you've just learnt in another example. A company produces five products and has the following cost and sales data. It can sell exactly 100 of each product it manufactures. Total fixed costs are £4,800, apportioned: A £5 (100), B £7 (100), C £11 (100), D £15 (100), E £10 (100), i.e. £4,800 total. Exhibit 36.9 presents this in a table.

**Exhibit 36.9**

Violet Ltd	Products				
	A	B	C	D	E
Cost per unit:	£	£	£	£	£
Direct labour and materials	8	9	16	25	11
Variable manufacturing costs	7	8	10	13	16
Marginal cost	15	17	26	38	25
Fixed costs	5	7	11	15	10
Full cost	20	24	37	53	35
Selling price per unit	30	21	31	60	20

On the full cost basis, only A and D appear to be profitable. Should production of B, C and E be discontinued? You know that production should cease only when the selling price is less than marginal cost. In Exhibit 36.10, you can see if following this brings more profit than following the result of the full cost calculation. You can also see what would have happened if production levels of all products continued as before.

**Exhibit 36.10**

	(1) Following full-cost pricing, cease producing B, C and E	(2) Using marginal costing, produce all items	(3) Ignore costing altogether and produce all items
Sales:	£	£	£
A 100 × £30	3,000	3,000	3,000
B 100 × £21		2,100	2,100
C 100 × £31		3,100	3,100
D 100 × £60	8,000	8,000	8,000
E 100 × £20		2,000	2,000
Total revenue	11,000	18,200	18,200
Less Costs:			
Direct labour and materials:			
100 × cost per product	(£33) 3,300	(£58) 5,800	(£69) 6,900
Variable manufacturing costs:	(£20) 2,000	(£18) 1,800	(£24) 2,400
100 × cost per product	4,800	4,800	4,800
Fixed costs (do not change)	(10,100)	(14,400)	(16,500)
Total costs			
Net profit	900	1,800	1,300

Chapter 8 • Provisions, reserves and liabilities

should ever meet a situation where it would suffer loss because of foreign currency exchange rate movements; or it could be a general reserve account that could be used for any purpose.

**See Section 8.3 for a further look at general reserves.**

Such transfers are an indication to the shareholders that it would be unwise at the time of the transfer to pay out all the available profits as dividends. The resources represented by this part of the profits should be retained, at least for the time being. Revenue reserves can be called upon in future years to help swell the profits shown in the profit and loss appropriation account as being available for dividend purposes. This is effected quite simply by debiting the particular reserve account and crediting the profit and loss appropriation account.

**Activity 8.1** Why do you think special revenue reserves are used, rather than simply leaving everything in the profit and loss account (which is, itself, a revenue reserve)?

**8.3 General reserve**

A general reserve is one that can be used for any purpose. For example, it may be needed because of the effect of inflation: assume a company needs £4,000 working capital in 20X3 and the volume of trade remains the same for the next three years but that during that time, the general level of prices increases by 25 per cent: the working capital requirement will now be £5,000. If all the profits are distributed, the company will still have only £4,000 working capital which cannot possibly finance the same volume of trade as it did in 20X3. Transferring annual amounts of profits to a general reserve instead of paying them out as dividends is one way to help overcome this problem.

**Activity 8.2** In terms of the amount of working capital, what is the difference between doing this and leaving the amount transferred in profit and loss?

On the other hand, it may just be the conservatism convention asserting itself, with a philosophy of 'it's better to be safe than sorry', in this case to restrict dividends because the funds they would withdraw from the business may be needed in a moment of crisis. This is sometimes overdone, with the result that a business has excessive amounts of liquid funds being inefficiently used when, if they were paid out to the shareholders, who are, after all, the owners of the business, the shareholders could put the funds to better use themselves.

This then leaves the question of the balance on the profit and loss appropriation account. If it is a credit balance, is it a revenue reserve? Yes. If profits are not distributed by way of dividend, they are revenue reserves until such time as they are converted into share capital or transferred to other reserves.

**6.4 Capital reserves**

A capital reserve is a reserve which is not available for transfer to the profit and loss appropriation account to swell the profits shown as available for cash dividend purposes. Most capital reserves can never be utilised for cash dividend purposes – notice the use of the word 'cash', as it will be seen later that bonus shares may be issued as a 'non-cash' dividend.

Let us look at the ways in which capital reserves are created.

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**Activities** occur frequently throughout the book to test your understanding of new concepts.

A number of **worked examples** are provided to guide you through more difficult concepts.

**Learning outcomes** revisit and reinforce the major topics covered in the chapter.

Chapter 23 • Consolidation of the financial statements of a vertical group of companies

Profit and Loss			
	£000	P	£000
Minority interest S1	3		60
Minority interest S2	14	51	15
Cost of control S1: pre-acquisition	4	52	35
Cost of control S2: pre-acquisition	9		
Cost of control: goodwill written off	20		
Balance to consolidated balance sheet	49		110
	110		110

General Reserve			
	£000	S1 balance b/d	£000
Cost of control 80% × 10	8		10
Minority interest 20% × 10	2		10
	10		10

Now, let's look at the same example but, this time, with the addition of proposed dividends.

**23.6 A worked example with proposed dividends**

Taking the same companies as in Example 1 but in this case the companies have proposed dividends at 31 December 20X5 of P Ltd £16,000; S1 Ltd £5,000; S2 Ltd £20,000. The balance sheets would have appeared:

Balance Sheets as at 31 December 20X5					
	P Ltd		S1 Ltd		S2 Ltd
	£000		£000		£000
Fixed assets	40		4		27
Investments					
Shares in S1	41		6		
Shares in S2			25		
Net current assets (as before)	19		6		28
Dividends to be received	4		15		15
	104		20		43
	(80% of S1)		(75% of S2)		
	4		15		15
	104		20		43
	£000		£000		£000
Share capital	40		5		20
Profit and loss as at 31.12.20X4	24		10		15
Retained profits for 20X5 (see below)	24		20		15
General reserve	16		10		10
Proposed dividends	104		50		35
	104		50		35
Note:					
Retained profit	P		S1		S2
Net profits 20X5	36		10		20
Less Proposed dividends	(10)		(5)		(20)
	26		5		0
Add Dividends receivable					
P 80% of S1 = 5	4		15		15
S1 75% of S2 = 20			20		15
	24		20		15

Part 3 • Groups

**16.9 Teaching method**

This topic can be taught and learnt using either of two methods. One is to focus on the journal entries required; this is quite abstract and, many feel, more difficult to understand than the other method. Accordingly, the method used in this book for teaching consolidated financial statements is that of showing the adjustments needed on the face of the consolidated balance sheet, together with any workings required to explain the amounts included. This approach is adopted because:

- 1 We believe our job is to try to help you to understand the subject, and not just to be able to perform the necessary calculations. We believe that, given a clear explanation of what is happening, the necessary accounting entries are much easier to understand. Showing the adjustments on the face of the balance sheet gives a 'bird's-eye view' so that it is easier to see what is happening, rather than having to laboriously trace your way through a complex set of double-entry adjustments made in ledger accounts.
- 2 This would be a much lengthier and more costly book if all of the double entry accounts were shown. It is better for a first look at consolidated financial statements to be an introduction to the subject only, rather than both an introduction and a very detailed analysis of the subject. If you can understand the consolidated financial statements shown in this book, you will have a firm foundation which will enable you, in your future studies, to tackle the more difficult and complicated aspects of the subject.

**Learning outcomes**

You should now have learnt:

- 1 Ordinary shareholders generally have voting rights, a right in the net assets of the company, and a right to an interest in profits earned.
- 2 Preference shareholders do not usually have any voting rights.
- 3 Ordinary shareholders receive copies of the financial statements for the company whose shares they hold, but not for any company whose shares are owned by the company they hold their shares in.
- 4 Consolidated financial statements provide shareholders in parent undertakings with financial statements incorporating the relevant data for all companies in the group – not just the parent company's own accounts data.
- 5 The status of 'subsidiary undertaking' is dependent upon the existence of control over that undertaking by another entity.
- 6 'Control' is determined by whether 'dominant influence' can be exerted, not simply by the level of investment in the company.

**Answers to activities**

16.1 Preference shareholders have far less risk in their investment than ordinary shareholders. In exchange for the greater risk they experience, the ordinary shareholders get voting rights that permit them to influence the decision making of the company.

Chapter 19 • Intercorporate dealings: indebtedness and unrealised profit in stocks

**Review questions**

Note: Unless otherwise indicated, the share capital of the companies in these review questions comprises ordinary shares of £1 each.

**19.1** Prepare a consolidated balance sheet from the following details as at 31 March 20X6.

Parent Balance Sheet as at 31 March 20X6			
	£		£
Investment in subsidiary: 50,000 shares bought 31.3.20X5			105,000
Fixed assets			180,000
Stock	26,000		245,000
Debtors	30,000		
Bank	4,000		
	60,000		
Less: Creditors	(1,000)		
	59,000		57,000
Share capital			107,000
Profit and loss:			200,000
As at 31.3.20X5			
Profit for 20X6	45,000		
	50,000		
General reserve			95,000
			7,000
			102,000

Subsidiary Balance Sheet as at 31 March 20X6			
	£		£
Fixed assets			104,000
Stock			19,000
Debtors			14,000
Bank			8,000
			41,000
Less: Creditors			(17,000)
			24,000
Share capital			50,000
Profit and loss:			
As at 31.3.20X5	35,000		
Profit for 20X6	51,000		
	86,000		
			136,000

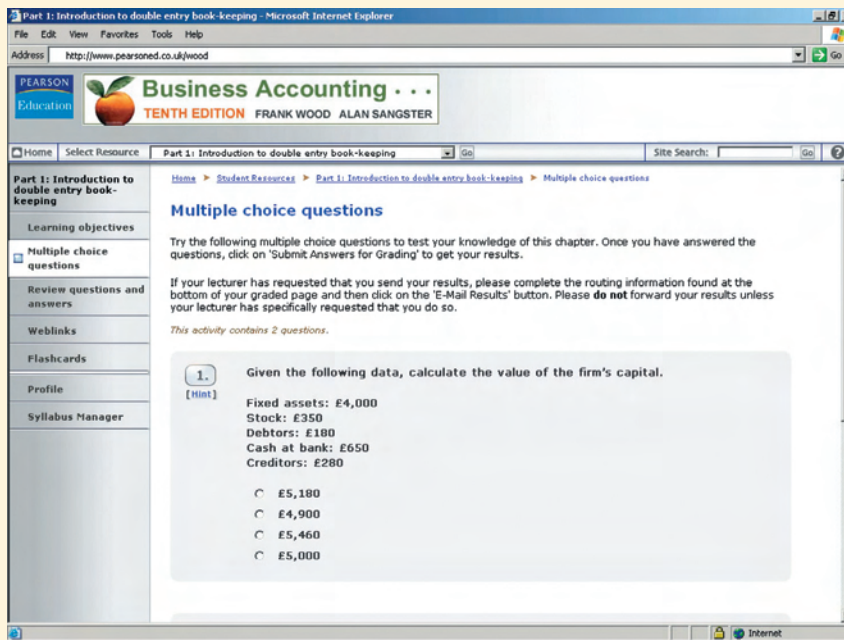
During the year, Parent sold goods which had cost £1,100 to Subsidiary for £1,800. None of these goods had been sold by the balance sheet date.

At the balance sheet date Parent owes Subsidiary £2,000.

Each chapter ends with a selection of **practice questions** to prepare you for your examinations.

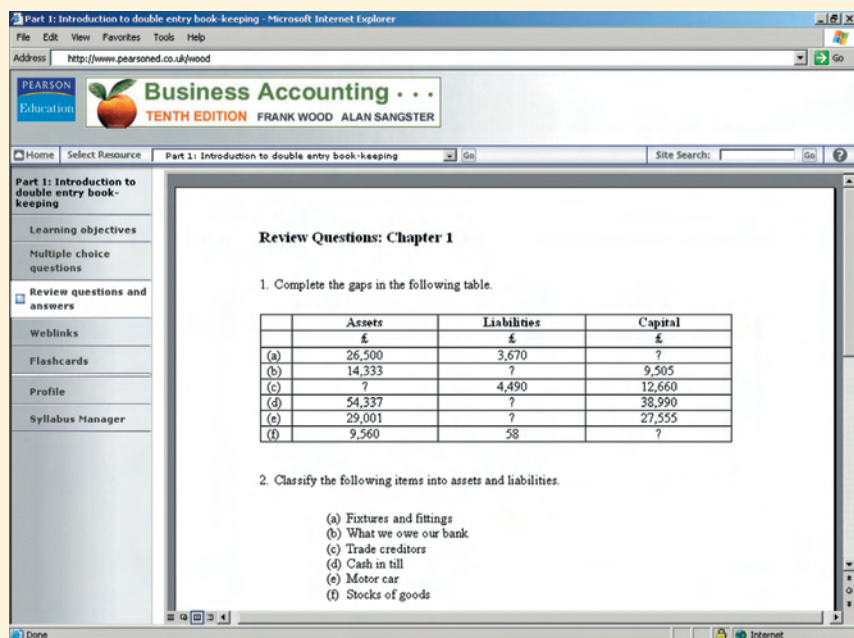
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**Multiple choice questions** test your learning and provide helpful feedback to improve your results.

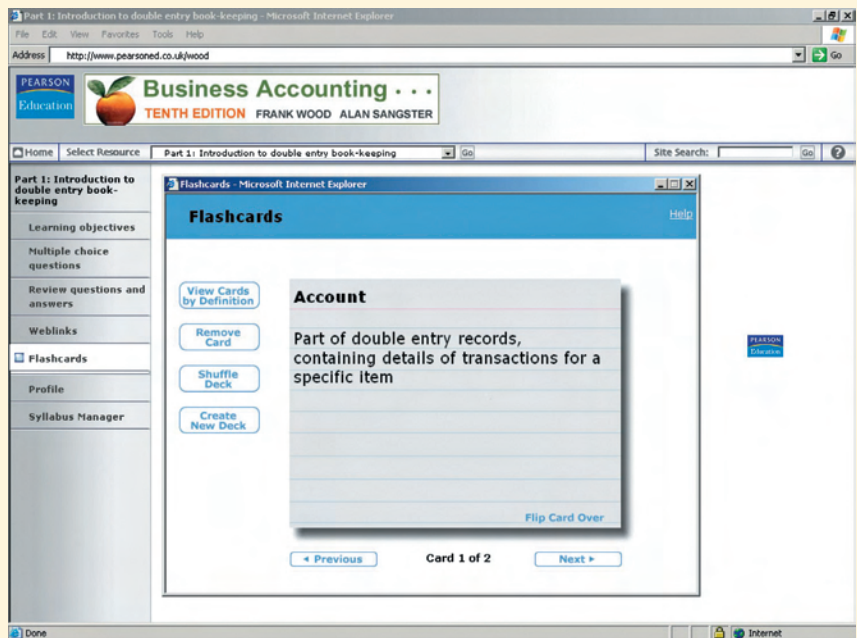
**Review questions and answers** provide practice at answering examination questions.







**Weblinks** to useful accounting sites.



**Flashcards** provide an interactive revision tool for all key terms.

# Notes for teachers and lecturers

This textbook has been written so that a very thorough introduction to accounting is covered in two volumes. The split into two volumes is a recognition of the fact that many students new to accounting will find all that they require in Volume 1. This second volume takes students who have completed their first accounting course to a more advanced stage.

It completes the coverage of the financial accounting part of quite a few examinations in accounting. As examination syllabuses are constantly being revised, it would not make sense to be too specific as to which chapters would be needed by students taking each of the various examinations. In particular, it can be said to be very suitable for students who are studying the subject for A-level, Scottish Higher Grade, or General Certificate of Secondary Education examinations, the Open University Certificate in Accounting, and for those studying with the Association of Accounting Technicians, the Institute of Secretaries and Administrators, or any of the six UK and Irish Chartered Accountancy bodies.

This volume examines all current UK accounting standards (both *Statements of Standard Accounting Practice* – SSAPs – and *Financial Reporting Standards* – FRSs) and, **new to this edition**, the equivalent international accounting standards (both *International Accounting Standards* – IASs – and *International Financial Reporting Standards* – IFRSs) in as much detail as is needed by most students at this level. However, where an entire examination paper is devoted to this topic, students may need a much more detailed knowledge of accounting standards than a textbook of this kind can provide. In this case, students would be well advised to refer to a specialist textbook on the topic, or to the standards themselves.

The pedagogical devices used in this book include:

- 1 Each chapter:
  - (a) starts with *Learning Objectives*;
  - (b) contains *Activities* designed to broaden and reinforce students' understanding of the concepts being covered and, in some cases, to introduce new concepts in such a way that they do not come as a surprise when introduced formally later in the book;
  - (c) ends with *Learning Outcomes* that can be mapped back to the Learning Objectives, so reinforcing the major topics and concepts covered in the chapter;
  - (d) contains answers to all the Activities immediately after the Learning Outcomes.
- 2 The book has an alphabetical Glossary (in Appendix 3) of all the significant terms introduced. Each entry is referenced back to the chapter in which it appeared.
- 3 A set of Notes for Students appears at the front of the book. This covers how to use this book, how to tackle the end-of-chapter Review Questions, and how to study for and sit examinations. It should be read by students before they start working through the main text.
- 4 Additional colours have been introduced to enhance readability and bring out key points in the text.

Some changes have been made to the content of the book in order to make it more relevant to today's accounting environment:

- Chapter 10, *Accounting Standards and Related Documents* has been updated to incorporate UK and international standards in issue in December 2004.
- Chapter 14, *Cash Flow Statements*, has been renamed and updated to include material and review questions on IAS 7 as well as FRS 1.

- In order that values used in the book more appropriately reflect the 21st century, there are now 364 Review Questions, of which 140 are new (130 from the ninth edition have been removed), and many of the examples in the text have been amended.
- Two new chapters have been added: Chapter 32, *Corporate Governance* and Chapter 33, *Public Sector Accounting*.
- Some examples and Review Questions reflect the change brought about as a result of FRS21 (IAS 10) whereby dividends declared after the balance sheet are no longer to be treated as a liability in the balance sheet.

In addition, in response to requests from reviewers, Exhibit 5.11, which shows the t-account entries for a sinking fund established in order to redeem debentures, has been amended to show the entries in a more complete and so more meaningful way.

We hope that you find these changes helpful and appropriate and would welcome comments on these and any other changes you feel ought to be made in future editions. You can contact Alan Sangster by email at [a.j.a.sangster@rgu.ac.uk](mailto:a.j.a.sangster@rgu.ac.uk) or by letter via the publishers.

Three chapters from the *eighth* edition (3, *Container Accounts*; 17, *Value Added Statements*, and 18, *Investment Accounts*) can be found on the *Frank Wood website*.

We would like to thank all those teachers and lecturers who gave us their advice as to the changes they would like to see incorporated in this edition.

We also wish to acknowledge the contribution of Mike Rogers, Basingstoke College of Technology, for Chapter 32, *Corporate Governance* and Chapter 33, *Public Sector Accounting*.

A *Solutions Manual* giving suggested solutions to those questions with the suffix A in the book (e.g. 5.8A) is available from the publishers free of charge to teachers and lecturers adopting this book on their course, or can be downloaded from the lecturers' section of the website for *Business Accounting 1* and *Business Accounting 2* at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

*Frank Wood and Alan Sangster*

# Notes for students

This textbook is organised to provide you with what has been found to be the most appropriate sequencing of topics as you build upon the foundations of accounting knowledge that you developed when you studied *Business Accounting 1*. You will find that a number of features of the book, properly used, will enhance your understanding and extend your ability to cope with what will possibly appear, at first, to be a mystifying array of rules and procedures.

While a lot, but by no means all, of what follows was written in *Business Accounting 1*, all of the advice given to you in that book will apply to you throughout your studies of accounting, whatever the level. We therefore offer no apologies for repeating some of it here along with new advice appropriate to the level of *Business Accounting 2*.

In order to make best use of this resource, you should consider the following as being a proven path to success:

- At the start of each chapter, **read the Learning Objectives**. Then, while you work through the material, try to detect when you have achieved each of these objectives.
- At the end of each chapter **check what you have learnt against the Learning Outcomes** that follow the main text.
- If you find that you cannot say ‘yes, I have achieved this’ to any of the Learning Outcomes, look back through the chapter and reread the topic you have not yet learnt.
- **Learn the meaning of each new term as it appears**. Do not leave learning what terms mean until you are revising for an exam. Accounting is best learnt as a series of building blocks. If you don’t remember what terms mean, your knowledge and ability to ‘do’ accounting will be very seriously undermined, in much the same way as a wall built without mortar is likely to collapse the first time someone leans against it.
- **Attempt each of the Activities in the book at the point at which they appear**. This is *very* important. The Activities will reinforce your learning and help set in context some of the material that may otherwise appear very artificial and distant from the world you live in. The answers are at the end of each chapter. **Do not look at the answers before you attempt the questions; you’ll just be cheating yourself**. Once you have answered one, check your answer against the one in the book and be sure you understand it before moving on.
- Above all, remember that accounting is a vehicle for providing financial information in a form that assists decision making. Work hard at presenting your work as neatly as possible and remember that pictures (in this case, financial figures) only carry half the message. When you are asked for them, words of explanation and insight are essential in order to make an examiner appreciate what you know and that you actually understand what the figures mean.

There are two subjects we would like you to consider very carefully: making best use of the end-of-chapter Review Questions and your examination technique.

## Review questions: the best approach

As we did in *Business Accounting 1*, we have set Review Questions at the end of most chapters for you to gauge how well you understand and can apply what you have learnt. **If you simply read the text without attempting the questions, then we can tell you now that you will not pass your examinations**. You should first of all attempt the question, and then check it fully against the answers at the back of the book.

What you should not do is perform a ‘ticking’ exercise. By this we mean that you should not simply compare the question with the answer and tick off the bits of the answer which relate to each part of the question. No one ever learnt to do accounting properly that way. It is tempting to save time in so doing but, believe us, you will regret it eventually. We have deliberately had the answers printed using a different page layout to try to stop you indulging in a ‘ticking’ exercise.

## Need for practice

You should also try to find the time to answer as many Review Questions as possible. Our reasons for saying this are as follows:

- 1 Even though you may think you understand the text, when you come to answer the questions you may often find your understanding incomplete. The true test of understanding is whether or not you can tackle the questions competently.
- 2 It is often said that practice makes perfect, a sentiment we don’t fully agree with. There is enough sense in it, however, in that if you don’t do quite a lot of accounting questions you will almost certainly not become good at accounting.
- 3 You simply have got to get up to a good speed in answering questions: you will always fail accounting examinations if you are a very slow worker. The history of accountancy examinations so far has always been that a ridiculously large amount of work has been expected from a student during a short time. However, examining boards maintain that the examination could be completed in the time by an adequately prepared student. You can take it for granted that *adequately prepared students* are those who not only have the knowledge, but have also been trained to work quickly and at the same time maintain accuracy and neatness.
- 4 Speed itself is not enough; **you also have to be neat and tidy**, and follow all the proper practices and procedures while working at speed. Fast but really scruffy work can also mean failing the exam. Why is this so? At this level the examiner is very much concerned with your practical ability in the subject. Accounting is a practical subject, and your practical competence is about to be tested. The examiner will therefore expect the answers to be neat and well set out. Untidy work with figures spread over the page in a haphazard way, badly written figures, and columns of figures in which the vertical columns are not set down in straight lines, will incur the examiner’s displeasure.
- 5 Appropriate presentation of information is important. Learn how to present the various financial statements you may need to produce in an examination. Examiners expect to see the items in trading and profit and loss accounts, balance sheets and cash flow statements in the correct order and will probably deduct marks if you don’t do so. Practise by writing down examples of these statements without any numbers until you always get the layout correct. One exam trick most students overlook is that the layout of a financial statement is often included in an examination paper as part of one question while another question asks you to produce the same financial statement. The one you need to produce will contain different numbers but the general layout should be very similar.

## Need for headings

The next thing is that work should not only be neat and well laid out. **Headings should always be given, and any dates needed should be inserted.** The test you should apply is to imagine that you are a partner in a firm of professional accountants and you are away on holiday for a few weeks. During that time your assistants have completed all sorts of work including reports, drafting final accounts, various forms of other computations and so on. All of this work is deposited on your desk while you are away. When you return you look at each item in the pile awaiting your attention.

Suppose the first item looks like a balance sheet as at 31 December in respect of one of your clients. When you looked at it you could see that it was a balance sheet, but you didn't know for which client, neither did you know which year it was for. Would you be annoyed with your staff? Of course you would. So therefore in an examination why should the examiner accept as a piece of your work a balance sheet answer without either the date or the name of the business or the fact that it is a balance sheet written clearly across the top? If proper headings are not given you may lose a lot of marks. **Don't wait until your examination to start this correct practice.** Always put in the headings properly. Similar attention should be paid to sub-totals which need showing, e.g. for Fixed assets, Current assets.

We will be looking at examination technique in the next section.

## The examiner

Really, what you should say to yourself is: 'Suppose I were in charge of an office, doing this type of accounting work, what would I say if one of my assistants put on my desk a sheet of paper with accounting entries on it written in the same manner as my own efforts in attempting this question?' Just look at some of the work you have done in the past. Would you have told your assistant to go back and do the work again because it is untidy? If you say that about your own work, why should the examiner think any differently?

Anyone who works in accounting knows well that untidy work leads to completely unnecessary errors. Therefore the examiner's insistence on clear, tidy, well laid out work is not an outdated approach; they want to ensure that you are not going to mess up the work of an accounting department. Imagine going to the savings bank and the manager says to you: 'We don't know whether you've got £5 in the account or £5,000. You see, the work of our clerks is so untidy that we can never sort out exactly how much is in anybody's account.' We would guess that you would not want to put a lot of money into an account at that bank. How would you feel if someone took you to court for not paying a debt of £100 when in fact you owed them nothing? This sort of thing would happen all the time if we simply allowed people to keep untidy accounts. The examiner is there to ensure that the person to whom they give a certificate will be worthy of it, and will not continually mess up the work of any firm at which they may work in the future.

We can imagine quite a few of you groaning at all this, and if you do not want to pass the examination please give up reading here. If you do want to pass, and your work is untidy, what can you do about it? The answer is simple enough: **start right now to be neat and orderly in your work.**

Quite a lot of students have said to us over the years: 'I may be giving you untidy work now, but when I actually get in the exam room I will then do my work neatly enough.' This is as near impossible as anything can be. You cannot suddenly become able to do accounting work neatly, and certainly not when you are under the stress and strain of an examination. Even the neatest worker may well find in an examination that their work may not be of its usual standard as nervousness will cause them to make mistakes. If this is true, then if you are an untidy worker now, your work in an examination is likely to be even more untidy. Have we convinced you yet? Present your work neatly.

## The structure of the questions

We have tried to build up the Review Questions in a structured way, starting with the easiest and then going on to more difficult ones. We would have liked to omit all the difficult questions, on the basis that you may well spend a lot of time doing them without adding very much to your knowledge about accounting. However, if all the questions were straightforward, the shock of meeting more complicated questions for the first time in an examination could lead you to fail it. We have therefore tried to include a mixture of straightforward and complicated questions to give you the maximum benefit.



## The answers

At the back of the book, you will find answers to approximately half of the Review Questions. The answers to the other Review Questions (indicated by the letter 'A' after the question number) are only available to you from your teacher or lecturer. Don't worry if you are studying this subject on your own. There are still more than sufficient Review Questions with answers in this book to ensure you know and can confirm that you understand the material.

## Examination technique

If you were completely devoid of examination technique you would probably not have advanced to this stage of your accounting studies. A lot of what follows was written in *Business Accounting 1*. Don't avoid reading it just because you read it when you were studying the material in that book.

In your first accounting examination you were competing with people who had probably never sat an accounting examination before. A lot of them will not get past Stage 1. In Stage 2 you are competing against people who have already proved they have a certain degree of competence in the subject. You might have got away with a certain amount of poor examination technique at Stage 1, but that will not be as easy at Stage 2.

Here we want to concentrate on the main deficiencies noted by examiners. These have never changed during the past 50 years. Students really should read examiners' reports – they will learn a lot from them.

## Students do not read the questions properly

A large number of students do not answer the questions as set by the examiner, because they have not read the question properly. They answer what they think the examiner wants, not what the examiner is asking for.

Let us take a simple example. Suppose the examiner sets the following question: 'Describe the use of accounting ratios in assessing the performance of businesses.'

A lot of students will immediately start to describe how to calculate various accounting ratios. Marks which will be obtained – nil. The question asked for the *use* of accounting ratios, not *how to calculate* them.

Many other students will have concentrated on the word *use*. They will then write their answer based on comparing this year's accounting ratios in a business with those of last year. They may well even mention trend ratios which will earn them some extra marks. If they keep their discussion to comparing ratios in a business in the year with other years, however, they cannot get top marks, no matter how well they have written their answers.

Why not? Well, they picked up the word *use*, but from then on they stopped reading properly. The question does not in any way limit itself to the ratios of one business only. First of all you can compare the performance of a business with its own performance in the past. Secondly, you may be able to compare one business with another business of a similar kind. In addition, if you miss out mentioning interfirm comparisons you will lose marks.

**Therefore, (a) read the question carefully, (b) underline the key words to get to the meaning of the question, (c) think carefully about how widespread your answer should be.**

On the other hand, there is no point in widening the question more than is needed. It is for the *use* of *accounting* ratios, *not* the use of *all types* of ratios. Besides accounting ratios there are marketing ratios – e.g. size of share of market, how long it takes to supply orders, ratios of defective goods etc. The question does not ask for all of these. If you give them, you will not get any extra marks.



## Poor time management

Using time well to gain the highest possible marks is essential. Examiners constantly report that examinees are very poor in this aspect of tackling an examination. How, then, can you avoid the usual pitfalls?

First of all, **read the rubric carefully**. These are the instructions at the top of the paper, e.g. 'Attempt four questions only: the three questions in Section A and one from Section B. Begin each answer on a separate page.'

You would be surprised to know that a lot of students would try to answer more than one question from Section B. If you tackle two questions from Section B, you will get marks for only one of your answers. Few examiners will mark both and then give you the marks for your highest marked answer. Many will simply mark the first of the optional questions answered and ignore the next, unnecessary answer.

Secondly, **start each answer on a new page**. You'll only annoy the examiner if you don't. It is your job to make the examiner's work as easy as possible. Examiners are only human, and it would be surprising if their annoyance did not result in its influencing the marking of your paper.

You really must attempt each and every question you are required to answer according to the rubric of the examination. If you have to answer five questions then you must avoid attempting only four questions.

Students often feel that they would be better off by handing in the complete answers to only four questions, instead of five incomplete answers. In accounting examinations this is not true. Why is this so?

- 1 Examiners use positive marking in accounting examinations. If you have done 80 per cent of an answer worth 20 marks in total, and you have got it absolutely correct, then you get 80% of 20 = 16 marks.
- 2 The first marks in a question are the easiest to obtain. Thus it is easier to get the first 10 marks out of 20 than it is to get the second lot of marks to get full marks. By ensuring that you get the easiest marks on every question it therefore makes your task easier.

To ensure that you tackle (not necessarily finish) each question you should **mark the number of minutes to be allowed by yourself for each question**. Thus a 20-mark question, in a 100-mark examination, should be given 20 per cent of the time, i.e. 20% of 3 hours = 36 minutes. When 36 minutes have passed, *stop answering the question* unless it is the last question to be attempted, and go on to the next question.

If you don't know the answer, or part of an answer, you should guess. You don't lose marks for guessing, and if you guess correctly you get the marks. Intuition will often give the correct answer. Very often if you don't guess on part of a computational question you will be unable to go on to the remainder of the question which you can answer.

## Workings

You may wonder why we have put this under a separate heading. We cannot emphasise enough how important it is that you should:

- (a) submit all your workings, and
- (b) ensure that the workings are set out so that the examiner can follow them.

A very high percentage of candidates in an examination are near the pass mark, within either a few percentage points above it or below it. If you are one of these candidates, and, as we have said, there are a lot of them, handing in workings which can be understood by the examiner will often ensure you a pass mark. Conversely, no workings, or completely unintelligible workings may well ensure your failing the examination.

This last point is important. Some students think that putting down a set of random jottings and calling them ‘workings’ will gain marks. It won’t. **Examiners won’t waste time searching through random jottings for something relevant.** Treat your workings as if they, themselves, are part of your answer. **Insert titles and headings to indicate what a particular working is about.**

## Tackle the easiest questions first

**Never start off your examination by tackling a difficult question.** You must be able to settle down properly and not let your nerves get out of control. Starting off on the easiest question is the best way to enable you to get off to a good start. Much more about this was written in *Business Accounting 1*.

## State your assumptions

It does happen that sometimes a question can contain ambiguities. Examination bodies try to prevent it happening, but it does occur occasionally. Unfortunately, questions do sometimes contain errors.

In both of these cases you must point out the ambiguity/error. You should then make an assumption, based on what you thought the examiner meant, and carry on with your answer. **You must, however, state what your assumption is.** Try to make your assumption as sensible as possible. The examiner will then mark your answer accordingly. If you make a ridiculous assumption, it is unlikely that you will be given any marks for that part of your answer. Don’t be sarcastic in your comments or complain about inefficiency – there are other times and places for that.

## Answering essay questions

### The problem

Unlike computational-type answers, you will not know whether your written answers are up to the mark until you receive your examination result. Likewise, written questions lack the certainty and precision of accounting problems and it is often difficult to fathom out exactly what the examiners require of you. For this reason, sound examination technique is absolutely essential together with precise knowledge of relevant law and regulations.

There are several major aspects to success in written papers. *Plan* your answer, answer the question *as set*, pay attention to good *layout*, and explain in clear and simple terms what you are doing. Remember you can only be marked on what you write down. You have no opportunity to explain some ambiguity or other and if what you write is unclear you will *not* get the benefit of the doubt.

### Plan

First read the question and jot down the key *verb*, i.e. your instructions; this may be to discuss, explain, advise, set out, list, draft an audit programme, write a letter, etc.

If the question requires a discussion or an explanation it should be written in proper paragraph form. Each paragraph should be self-contained and explain the point it makes. Sentences should be short and to the point. The ideal length for a paragraph is three sentences with four as a maximum. Over four and you are probably making more than one point and should have gone into two paragraphs.

Plan how many points you are going to make and what the answer is. This is essential as otherwise your answer will ‘drift’ as you struggle to come to some conclusion. The plan should consist of arrows connecting points to each other so that the answer will flow and be logical. The plan need not be too extensive; it is silly to waste time on a ‘mini-answer’. It should consist of the *headings* you are going to use.

## Layout

Whenever examiners meet to discuss results, or write down their commentary on students' performance, they all agree on the importance of good layout; yet students generally tend to take no notice. The range of marks between good papers and poor papers tends to be quite small. Anything you can do to put the examiner on your side will pay off in those few extra marks.

The main areas for good layout are:

- 1 *Tabulate* in numbered points, unless you are writing an essay-type question (as explained above).
- 2 Leave at least a clear line between each point or paragraph.
- 3 Use headings whenever possible to indicate what major point or series of points you are about to make. Make it easy for the examiner to read your work and follow what you are doing. A solid mass of material is difficult to read, provides no respite for the eye and shows a lack of discipline. Remember that you are taking a *professional* examination and there is no room for academic licence.
- 4 Take care with your *language*. Be objective and avoid the use of the words 'I' or 'we' at too frequent intervals. Be direct and concise, say what you mean, do not use pompous terminology, and use technical words with their correct meaning.

Short sentences are far more effective and punchy than long ones. An accounting programme or evaluation of an internal control system could well start with a series of *verbs*. Good ones are: test, examine, inspect, calculate, reconcile, compare, summarise, inquire, investigate. These key words will help you to construct answers to these types of questions much more direct and to the point. If you start with them you are bound to avoid falling into the trap of being long-winded, or of padding out your answer. You only have a limited time and everything you write down must earn you marks.

- 5 *Think* while you are writing out your answer to make sure you are answering the question *as set*. Keep on reading the instructions and make sure you are following them. Use the question to help you to get the answer and, while this should be tackled at the planning stage, it is always possible that inspiration will strike while you are writing out your answer. In which case jot the point down on your plan, otherwise you might forget it and that can cause frustration. What you say should be relevant, but if you are in doubt about the relevance but sure about the accuracy – include it in your answer. You cannot lose and it may be one of the key points the examiner was looking for.

## Key points

**Do try to find a couple of key points to each question.** These are points which you feel are vital to answer the question. You may well be right, and anyway, jotting them down after you have read the question carefully can help to give your answer much needed direction.

## Practice

You will need to practise the above routine. Written answers in fact need more practice than computational ones. Have a go at the question. Write out the answer as you would in the examination. Compare with the suggested answers.

**Write out at the foot of your answer what you left out and what you got wrong.** Learn from the answers and from the work you do, so that when you see a similar question you will produce a better answer.

## Time pressure

You will experience a lot of pressure of time as you progress with written questions. Do not worry; this is a good sign.

In the examination, spread your time sensibly. Start with the questions you like the look of most and, if you have to go slightly over the time you allotted for those, do so. End with the

question you think you cannot answer or will be hardest to answer, but do give yourself time to have a reasonable go at it.

If a written question is included in a computational paper do not go over the time on it but *do spend the allocated time*. **Examiners pay great attention to the written parts of computational papers, so do not skimp this part.**

All this sounds formidable and, of course, it is. It requires skill, application and, above all, confidence. Practice makes perfect and once the skill is acquired then, like riding a bicycle, it will not be forgotten. Take pride in your work and be critical of your own efforts, but do not imagine your answers will have to be perfect to pass the examination. Suggested answers tend to be too long because tutors are afraid to reveal any signs of weakness or ignorance.

Go for the main points and make them well. That is the secret of success.

## Summary

### Remember:

- 1 Read the rubric, i.e. the instructions.
- 2 Plan your time before you start.
- 3 Tackle the easiest questions first.
- 4 Finish off answering each question when your time allocation for the question is up.
- 5 Hand in all your workings.
- 6 Do remember to be neat, also include all proper headings, dates, sub-totals, etc. A lot of marks can be lost if you don't.
- 7 Only answer as many questions as you are asked to tackle by the examiner. Extra answers will not normally be marked.
- 8 Underline the *key words* in each question to ensure that you answer the question set, and not the question you wrongly take it to be.
- 9 Never write out the text of essay questions.

Best of luck with your examination. We hope you get the rewards you deserve!

*Frank Wood and Alan Sangster*

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# SPECIAL ACCOUNTS



## Introduction

This part is concerned with two items that are treated in a similar way, irrespective of the form of business involved.

1	Accounting for branches	3
2	Hire purchase accounts	29





# chapter 1

## Accounting for branches

### Learning objectives

After you have studied this chapter, you should be able to:

- explain two methods of recording the entries relating to branches
- describe how double column trading and profit and loss accounts can be used in order to monitor any unexpected losses
- explain the difference between using a memoranda columns approach and an integrated stock monitoring system for stock control
- explain the issues relating to maintaining branch accounts for foreign branches

### Introduction

In this chapter, you'll learn about two methods of recording branch transactions and of the issues that arise when items are in transit between branches. You'll also learn about how to record the entries in the books when branches are located in different countries.

## 1.1 Accounting records and branches

When we look at accounting records to show transactions at the branches of an organisation, we have a choice of two main methods. These are:

- (a) the head office keeps all the accounting records, or
- (b) each branch has its own full accounting system.

It is easier to understand accounting for branches if these two main methods are dealt with separately.

## 1.2 If the head office maintains all the ledgers

The ledgers are used for three main purposes:

- (a) to record transactions showing changes in assets, liabilities and capital;
- (b) to ascertain the profitability of each branch; and, if possible,
- (c) to check whether anyone at the branches is stealing goods or cash.

**This third purpose is very important for firms that have many branches.** The people who manage or work in these branches are receiving and paying out large sums of money. In addition they

may be handling large amounts of stocks of goods. The branch or branches may be a considerable distance away from the head office. This may mean that the manager, or any of the staff, may think that they can steal things without being caught.

### 1.3 Methods for checking stock and cash

If a firm with only a few branches sells only very expensive cars, it would be easy to check on purchases and sales of the cars. The number of cars sold would not be very great. Checking that cars or money have not been stolen would be easy. However, a firm such as a store with branches selling many thousands of cheap items could not be checked so easily. To keep a check on each carton of salt or bag of flour sold would be almost impossible. Even if it could be done, such checking would cost too much.

The accounting answer to this problem is to record all transactions at the branch in terms of selling prices. Then for each accounting period, it should be possible to check whether the closing stock is as it should be. For a small branch, for example, you may be given the following figures:

	£
Stock on hand at 1 January – at selling price	5,000
January – Goods sent to the branch by the head office – at selling price	20,000
January – Sales by the branch – obviously at selling price	18,000

The calculation of the closing stock becomes:

	£
Opening Stock 1 January (selling price)	5,000
Add Goods sent to the branch (selling price)	<u>20,000</u>
Goods which the branch had available for sale (selling price)	25,000
Less Goods sold (selling price)	<u>18,000</u>
Closing stock at 31 January should therefore be (selling price)	<u><u>7,000</u></u>

### 1.4 Allowances for deficiencies

In every business there will be:

- (a) wastage of goods for some reason – goods may be damaged or broken, or they may be kept too long or somehow waste away;
- (b) stealing by customers, especially in the retail business;
- (c) thefts by employees.

No one can be certain how much stock is wasted or stolen during a period. Only experience will enable a firm to make a good estimate of these losses.

### 1.5 The double column system

At regular intervals, obviously at least once a year but usually more frequently now that accounting for branches is virtually always computerised, the head office may draft a trading and profit and loss account for each branch. The trading account can be shown with two columns, one in which goods sent to the branch or in stock are shown at cost price, i.e. the normal basis for any business. This column is therefore part of a normal trading account for the branch.

The other column will show all trading account items at selling price. This column allows deficiencies in trading to be compared with the normal deficiency allowed for wastages, etc. It is not a part of the double entry recording; it is a memorandum column for control purposes only. When such a system is in place, it is easy for head office to tell if the branch is operating as expected; and, of course, easy for the branch itself to assess its own operations against company norms.

### Exhibit 1.1

Branch Trading and Profit and Loss Account for the year ended 31.12.20X8					
	At selling price			At selling price	
Stock 1 Jan 20X8	£	£		£	£
	1,600	1,200	Sales	7,428	7,428
Goods from head office	8,000	6,000	Deficiency (difference)	172	
	9,600	7,200			
Less Stock 31 Dec 20X8	2,000	1,500			
	7,600	5,700			
Gross profit c/d	7,600	1,728			
		7,428		7,600	7,428
Expenses		1,000	Gross profit b/d		1,728
Net profit		728			
		1,728			1,728

Exhibit 1.1 is drafted from the following details for a business which sells goods at a uniform mark-up of  $33\frac{1}{3}$  per cent on cost price:

	£
Stock 1 Jan 20X8 (at cost)	1,200
Goods sent to the branch during the year (at cost)	6,000
Sales (selling price)	7,428
Stock 31 Dec 20X8 (at cost)	1,500
Expenses	1,000

Allowances for wastage, etc., 1 per cent of sales.

As the actual deficiency of £172 exceeds the amount expected, i.e. 1 per cent of £7,428 = £74, an investigation will be made.

**This method is suitable where all the sales are for cash, there being no sales on credit, or when debtors make their payments to the branch where the sale took place.**

#### Activity 1.1

Why should it make any difference if debtors make payment to a branch other than the one where the sale took place?

## 1.6 The stock and debtors system

Further adjustments are needed when there are credit sales as well as cash sales. There are two ways of making the entries. These are:

- (a) using memoranda columns *only* to keep a check on stock, as shown in Section 1.5;  
 (b) integrating stock control into the double entry system. This is often called an ‘integrated system’.

Under both these approaches, information is kept relating to stock and debtors. Let’s look at both these approaches.

Using the following data, Exhibit 1.2 shows the records in the Head Office books when (a), the memoranda method, is used. Exhibit 1.3 shows (b) the records when the integrated method is in used.

*Data:* A branch sells all its goods at a uniform mark-up of 50 per cent on cost price. Credit customers are to pay their accounts directly to the head office.

	£
First day of the period:	
Stock (at cost)	(A) 2,000
Debtors	(B) 400
During the period:	
Goods sent to the branch (at cost)	(C) 7,000
Sales – cash	(D) 6,000
Sales – credit	(E) 4,800
Cash remitted by debtors to head office	(F) 4,500
At the close of the last day of the period:	
Stock (at cost)	(G) 1,800
Debtors	(H) 700

**Note:** The letters A to H beside the figures have been inserted to identify the entries in Exhibits 1.2 and 1.3.

### (a) Memoranda columns method

#### Exhibit 1.2

Branch Stock							
		Selling price (memo only)				Selling price (memo only)	
		£	£			£	£
Stock b/d	(A)	3,000	2,000	Sales: Cash	(D)	6,000	6,000
Goods sent	(C)	10,500	7,000	Credit	(E)	4,800	4,800
Gross profit to profit and loss			3,600	Stock c/d	(G)	2,700	1,800
		<u>13,500</u>	<u>12,600</u>			<u>13,500</u>	<u>12,600</u>
Stock b/d	(G)	2,700	1,800				
Branch Debtors							
		£				£	
Balances b/d	(B)		400	Cash	(F)		4,500
Branch stock	(E)		<u>4,800</u>	Balance c/d	(H)		<u>700</u>
			<u>5,200</u>				<u>5,200</u>
Balance b/d			700				

Goods Sent to Branches			
	£		£
Transfer to head office trading account	<u>7,000</u>	Branch stock (C)	<u>7,000</u>

Cash Book			
	£		
Branch stock – cash sales (D)	6,000		
Branch debtors (E)	<u>4,500</u>		

The branch stock account is thus, in effect, a trading account, and is identical to the type used in the double column system. In addition, however, a branch debtors account is in use.

The balance of the goods sent to the branches account is shown as being transferred to the head office trading account. This figure is deducted from the purchases in the head office trading account, so that goods bought for the branch can be disregarded when the gross profit earned by the head office is calculated.

### (b) The integrated system

The integrated system introduces the idea that gross profit can be calculated by reference to profit margins. It relies upon all selling prices being set strictly on the basis of the profit margins adopted by the business. For example, assume that a self-employed travelling salesman sells all his goods at cost price plus 25 per cent. At the start of a week he has £80 stock at cost, he buys goods costing £800, he sells goods for £900 (selling price) and he has goods left in stock at the end of the week which have cost him £160. A trading account based on this data is shown below.

Trading Account for the week ended . . .		
	£	£
Sales		900
Less: Cost of good sold	80	
Opening stock	<u>800</u>	
Add: Purchases	880	
Less: Closing stock	<u>(160)</u>	
		(720)
Gross profit		<u>180</u>

This could, however, also be shown as:

	£
Profit made when opening stock is sold	20
Profit made when purchases are sold	<u>200</u>
Profit made when all goods are sold	210
But he still has left unsold goods (cost £160) on which the profit still has to be realised	( 40)
Therefore profit realised	<u>180</u>

This could be expressed in account form as:

Salesman's Adjustment			
	£		£
Gross profit realised	180	Unrealised profit b/d	20
Unrealised profit c/d	<u>40</u>	Unrealised profit when goods were bought	<u>200</u>
	<u>220</u>		<u>220</u>

The integrated system uses an adjustment account which is needed because goods sent to the branch are shown at cost price in a 'goods sent to branches account'. (This is the same as under the memoranda column method.) In the branch stock account, these goods are shown at selling price. Obviously, if one entry is made at cost price and the other at selling price, the accounts would not balance. As the integrated system does not use memoranda columns, to correct this an extra account called a 'branch adjustment account' is opened. The entries in this account are in respect of the profit content *only* of goods.

The branch stock account acts as a check upon stock deficiencies. The branch adjustment account shows the amount of gross profit realised (i.e. earned) and unrealised during the period.

Exhibit 1.3 shows the ledger accounts needed for the integrated system from the same information given at the beginning of Section 1.6 that was used to complete Exhibit 1.2. In this example a stock deficiency does not exist. The letters A to H in Exhibit 1.3 conform to the letters A to H shown against the information.

### Exhibit 1.3

Branch Stock (Selling Price)					
		£			£
Balance b/d	(A)	3,000	Sales: Cash	(D)	6,000
Goods sent to branch	(C)	10,500	Credit	(E)	4,800
		<u>13,500</u>	Balance c/d	(G)	<u>2,700</u>
					<u>13,500</u>
Balance b/d	(G)	2,700			
Branch Debtors (Selling Price)					
		£			£
Balances b/d	(B)	400	Cash	(F)	4,500
Branch stock	(E)	<u>4,800</u>	Balances c/d	(H)	<u>700</u>
		<u>5,200</u>			<u>5,200</u>
Balances b/d	(H)	700			
Goods Sent to Branches (Cost Price)					
		£			£
Transfer to head office trading account		<u>7,000</u>	Branch stock	(C)	<u>7,000</u>
Branch Adjustment (Profit Content)					
		£			£
Gross profit to profit and loss		3,600	Unrealised profit b/d	(A)	1,000
Unrealised profit c/d	(G)	<u>900</u>	Branch stock – goods sent	(C)	3,500
		<u>4,500</u>			<u>4,500</u>
			Unrealised profit b/d	(G)	900

The opening and closing stocks are shown in the branch stock account at selling price. However, the balance sheet should show the stock at cost price. The previous balance sheet should therefore have shown stock at cost £2,000. This is achieved by having a compensating £1,000 credit balance brought forward in the branch adjustment account so that the debit balance of £3,000 in the branch stock account, when it comes to being shown in the balance sheet, has the £1,000 credit balance deducted to show a net figure of £2,000. Similarly, at the close of the period the balance sheet will show stock at £1,800 (branch stock debit balance £2,700 less branch adjustment credit balance £900).

Compare the entries in the branch adjustment account to the differences between the memoranda and 'real' column figure in the branch account shown in Exhibit 1.2. You should be able to see how both methods show the same information, one (the *memoranda columns method*) using gross amounts as the basis for presentation while the other (the *integrated method*) presents the gross profits as separate amounts.

## 1.7 The stock and debtors integrated system – further points

### Returns

Goods may be returned:

- (a) from the branch stock to the head office
- (b) from the branch debtors to the branch stock
- (c) from the branch debtors to the head office.

#### Exhibit 1.4

To examine the entries needed, suppose a firm sells goods at cost plus 25 per cent profit, and, according to the categories stated, goods sold at the following prices were returned: (a) £90, (b) £150, (c) £30. The entries needed are:

Branch Stock (Selling Price)					
Returns from debtors	(b)	£ 150	Returns to head office	(a)	£ 90
Branch Adjustment (Profit Loading)					
Returns from branch	(a)	£ 18			
Returns from debtors	(c)	6			
Goods Sent to Branches (Cost Price)					
Returns from branch	(a)	£ 72			
Returns from debtors	(c)	24			
Branch Debtors (Selling Price)					
			Returns to branch	(b)	£ 150
			Returns to head office	(c)	30

Entries (b), both being in accounts shown at selling price, were two in number, i.e. £150 Dr and £150 Cr; entries (a) and (c) each needed entries in three accounts, (a) being £45 Cr and £18 Dr and £72 Dr, (c) being £30 Cr and £24 Dr and £6 Dr.



## 1.8 If each branch maintains full accounting records

Branches rarely maintain full accounting records. When they do, it is usually in a business with just a few branches, and is normally done only when a branch is large enough to warrant employing its own accounting staff.

A branch cannot operate on its own without resources, and it is the business as a whole which provides these in the first instance. It will want to know how much money it has invested in each branch, and from this arises the concept of branch and head office current accounts. The relationship between the branch and the head office is seen as that of a debtor/creditor. The current account shows the branch as a debtor in the head office records, while the head office is shown as a creditor in the branch records. (This may seem similar to what you learnt about joint venture accounting in *Business Accounting 1*.)

The current accounts are used for transactions concerned with supplying resources to the branch or in taking back resources. For such transactions, full double entry records are needed, both in the branch records and in the head office records, i.e. each item will be recorded twice in each set of records. Some transactions will, however, concern the branch only, and these will merely need two entries in the branch records and none in the head office records. Exhibit 1.5 shows several transactions and the records needed.

### Exhibit 1.5

A firm with its head office in London opened a branch in Manchester. The following transactions took place in the first month:

- (A) Opened a bank account at Manchester by transferring £10,000 from the London bank account.
- (B) Bought premises in Manchester, paying by cheque drawn on the London bank account, £50,000.
- (C) Manchester bought a motor van, paying by cheque £6,000 from its own bank account.
- (D) Manchester bought fixtures on credit from A B Equipment Ltd, £2,900.
- (E) London supplied a machine valued at £2,500 from its own machinery.
- (F) Manchester bought goods from suppliers, paying by cheque on its own account, £2,700.
- (G) Manchester's cash sales banked immediately in its own bank account, £30,000.
- (H) Goods invoiced at cost to Manchester during the month by London (no cash or cheques being paid specifically for these goods by Manchester), £28,000.
- (I) A cheque is paid to London by Manchester as general return of funds, £18,000.
- (J) Goods returned to London by Manchester – at cost price, £1,000.

The exact dates have been deliberately omitted. It will be seen later that complications arise because of differences in the timing of transactions. Each transaction has been identified by a capital letter. The relevant letter will be shown against each entry in the accounts.

#### Head Office Records (in London) Manchester Branch Current Account

		£			£
Bank	(A)	10,000	Bank	(I)	18,000
Bank – premises	(B)	50,000	Returns from Branch	(J)	1,000
Machinery	(E)	2,500			
Goods sent to Branch	(H)	28,000			

#### Bank

		£			£
Manchester Branch	(I)	18,000	Manchester Branch	(A)	10,000
			Manchester premises	(B)	50,000

<i>Machinery</i>				
			Manchester Branch	£ (E) 2,500
<i>Goods Sent to Branch</i>				
Returns from Branch	(J)	£ 1,000	Manchester Branch	£ (H) 28,000
<b>Branch Records (in Manchester)</b>				
<i>Head Office Current Account</i>				
Bank	(I)	£ 18,000	Bank	£ (A) 10,000
Returns	(J)	1,000	Premises	(B) 50,000
			Machinery	(E) 2,500
			Goods from Head Office	(H) 28,000
<i>Bank</i>				
Head Office	(A)	£ 10,000	Motor van	£ (C) 6,000
Cash sales	(G)	30,000	Purchases	(F) 2,700
			Head Office	(I) 18,000
<i>Premises</i>				
Head Office	(B)	£ 50,000		
<i>Motor Van</i>				
Bank	(C)	£ 6,000		
<i>Fixtures</i>				
A B Equipment Ltd	(D)	£ 2,900		
<i>A B Equipment Ltd</i>				
			Fixtures	£ (D) 2,900
<i>Machinery</i>				
Head Office	(E)	£ 2,500		
<i>Purchases</i>				
Bank	(F)	£ 2,700		





<i>Sales</i>				
			Bank	£ 30,000
		(G)		
<i>Goods from Head Office</i>				
Head Office	(H)	£ 28,000	Head Office – returns	£ 1,000
			(J)	

**Note:** It can be seen that items C, D, F and G are entered only in the Manchester records. This is because these items are purely internal transactions and are not concerned with resources flowing between London and Manchester.

## 1.9 Profit or loss and current accounts

The profit earned by the branch (or loss incurred by it) does not belong to the branch. It belongs to the firm and must therefore be shown as such. The head office represents the central authority of the firm and profit of the branch should be credited to the Head Office Current Account, any loss being debited.

The branch will therefore draw up its own trading and profit and loss account. After agreement with the head office the net profit will then be transferred to the credit of the Head Office Current Account. The head office will then debit the Branch Current Account in its own records and credit its own profit and loss account. Taking the net profit earned in Exhibit 1.5 as £7,000, the two sets of books would appear thus:

<b>Head Office Records (in London)</b>				
<i>London Profit and Loss Account</i>				
				£
			Net profit earned by the Manchester Branch	7,000
<i>Manchester Branch Current Account</i>				
	£			£
Bank	10,000	Bank		18,000
Bank: premises	50,000	Returns from Branch		1,000
Machinery	2,500			
Goods sent to Branch	28,000			
Net profit to main profit and loss account	7,000	Balance c/d		78,500
	<u>97,500</u>			<u>97,500</u>
Balance b/d	78,500			
<b>Branch Records (in Manchester)</b>				
<i>Manchester Profit and Loss Account</i>				
	£			
Net profit carried to the Head Office Current Account	7,000			

*Head Office Current Account*

	£		£
Returns to Head Office	1,000	Bank	10,000
Bank	18,000	Premises	50,000
		Machinery	2,500
		Goods from Head Office	28,000
Balance c/d	<u>78,500</u>	Profit and loss account	<u>7,000</u>
	<u>97,500</u>		<u>97,500</u>
		Balance b/d	78,500

## 1.10 The combined balance sheet

After the trading and profit and loss accounts have been drawn up a balance sheet is required for the whole firm. The branch will send its trial balance to the head office which will add the assets in its own trial balance to those in the branch trial balance to give the total for each type of asset to be shown in the balance sheet, and a similar procedure will be carried out for the liabilities.

In the trial balances, the Head Office Current Account will be a debit balance while the Branch Current Account will be a credit balance, e.g. the figures of £78,500 in the London books and Manchester books. These therefore cancel each other out and are not shown in the combined balance sheet. It is correct not to show them, as the two balances do not, in fact, represent assets or liabilities of the business.

### Activity 1.2

If the current account balances do not represent assets or liabilities, what do they represent?

## 1.11 Items in transit

Earlier in this chapter, it was mentioned that the timing of transactions could raise complications. These are similar to those that give rise to the need for bank reconciliations, which you learnt about in *Business Accounting 1*. Obviously, a cheque sent by post by a Manchester branch would probably arrive in London the next day, while goods sent from London to Manchester, or returned from Manchester to London, could arrive on the same day or anything up to several days later.

Both the head office and the branch will have entered the transactions at the dates of remittance or receipt and, as the remittance from one place will occur on one day and the receipt may occur at the other place on another day, items which are in transit at the end of a financial period may not be recorded in both sets of books. That is, the two sets of books will not contain identical figures. As a result, the balances on the current accounts will not be equal to one another.

Not surprisingly, this is not acceptable. Both current accounts must have the same balance so that they will cancel out when the combined balance sheet is prepared. As the two sets of records contain some figures which are different from each other they must somehow be reconciled so that the balances carried down are the same.

When preparing a bank reconciliation, permanent adjustments are made to the bank account balance recorded in the books. In contrast, when dealing with reconciliations of branch and head office current accounts, adjustments are made that are then carried down as balances to the next period. Which set of figures is to be altered? The amendments are all made in the head office books. Otherwise, when several branches are involved, things could get very confusing indeed.

Exhibit 1.6 is for a second month of the business shown in Exhibit 1.5. However, whereas there were no items in transit at the end of the first month, this does not hold true at the conclusion of the second month.

### Exhibit 1.6

<i>Head Office records (showing current accounts only)</i>	£
Goods sent to Branch	37,000
Cheques received from Branch	29,500
Returns received from Branch	4,400
<i>Branch records</i>	
Goods received from Head Office	35,000
Cheques sent to Head Office	30,300
Returns sent to Head Office	5,000

It may be assumed that the net profit as shown by the profit and loss account of the branch is £8,000.

#### Branch Records (in Manchester)

##### Head Office Current Account

	£		£
Bank	30,300	Balance b/d	78,500
Returns to Head Office	5,000	Goods from Head Office	35,000
Balance c/d	<u>86,200</u>	Net profit	<u>8,000</u>
	<u>121,500</u>		<u>121,500</u>
		Balance b/d	86,200

#### Head Office Records (in London)

##### Manchester Branch Current Account

	£		£
Balance b/d	78,500	Bank	(B) 29,500
Goods sent to Branch (A)	37,000	Returns received	(C) 4,400
Net profit	8,000		

At this point, the following items are observed to be in transit at the end of the period (these should be confirmed to ensure that they are not merely errors in accounting records):

- (A) Goods sent to the branch amounting to £2,000 (£37,000 – £35,000).
- (B) Cheques sent by the branch amounting to £800 (£30,300 – £29,500).
- (C) Returns from the branch amounting to £600 (£5,000 – £4,400).

- (A) needs amending to £35,000. This is done by crediting the account with £2,000.
- (B) needs amending to £30,300. This is done by crediting the account with £800.
- (C) needs amending to £5,000. This is done by crediting the account with £600.

As these are items in transit, they need to be taken to the period in which they arrive, i.e. the next month. This is effected by carrying them down as balances into the next period. The branch current account will now be completed.

It may appear at first sight to be rather strange that all the items in transit are shown as debit balances. However, it must be appreciated that goods (including returns) and money in transit are assets of the firm at the end of a financial period. That they are in transit is merely stipulating that the assets are neither at the head office nor at the branch but are somewhere else. Assets are

always shown as debit balances and there is no reason why it should be different just because they have not reached their destination on a certain date.

*Manchester Branch Current Account*

	£		£
Balance b/d	78,500	Bank	29,500
Goods sent to branch	37,000	Returns received	4,400
Net profit	8,000	Goods in transit c/d	2,000
		Cheques in transit c/d	800
		Returns in transit c/d	600
		Balance c/d	<u>86,200</u>
	<u>123,500</u>		<u>123,500</u>
Balance b/d	86,200		
Goods in transit b/d	2,000		
Cheques in transit b/d	800		
Returns in transit b/d	600		

All of these four balances are shown in the trial balance. When the combined balance sheet is being prepared the balance of the two current accounts (in this case £86,200) will cancel out as it is a debit balance in one trial balance and a credit balance in the other. The goods in transit £2,000 and the returns in transit £600, both being goods, are added to the stock in the balance sheet. This is because at the end of the second month, stock is made up of the following items:

	£
Stock at London	
Add Stock at Manchester	
Add Stocks in transit (£2,000 + £600)	<u>2,600</u>
Total stock	<u>      </u>

Similarly, the balance for cheques or remittances in transit is added to the bank balances at London and Manchester:

	£
Bank balance at London	
Add Bank balance in Manchester	
Add Remittances in transit	<u>800</u>
	<u>      </u>

This is rather like a man who has £14 in one pocket and £3 in another. He takes a £5 note from the pocket containing the larger amount and is transferring it to his other pocket when someone asks him to stay perfectly still and calculate the total cash in his possession. He therefore has:

	£
Pocket 1 (£14 – £5)	9
Pocket 2	3
Cash in transit	<u>5</u>
	<u>17</u>

## 1.12 Items in transit and the balance sheet

Using the figures already given in Exhibit 1.6, but adding some further information, trial balances for London head office and the Manchester branch are now shown in Exhibit 1.7 after the profit and loss accounts have been drawn up for the second month.

**Exhibit 1.7**

Trial Balances as at 29 February 20X8				
	London Head Office		Manchester Branch	
	Dr	Cr	Dr	Cr
	£	£	£	£
Premises	100,000		50,000	
Machinery	20,000		2,500	
Fixtures	31,000		2,900	
Motor vans	15,000		6,000	
Closing stock	38,000		7,000	
Debtors	11,000		8,000	
Bank	122,000		21,600	
Head Office Current Account				86,200
Branch Current Account	86,200			
Goods in transit	2,000			
Cheques in transit	800			
Returns in transit	600			
Creditors		13,000		11,800
Capital account as at 1 Jan 20X8		378,600		
Net profit for the two months (Branch £15,000 + Head Office £20,000)		35,000		
	426,600	426,600	98,000	98,000

The combined balance sheet can now be drawn up.

**Balance Sheet as at 29 February 20X8**

	£	£	
<i>Fixed assets</i>			
Premises		150,000	
Machinery		22,500	
Fixtures		33,900	
Motor vans		<u>21,000</u>	
		227,400	
<i>Current assets</i>			
Stocks (Note 1)	47,600		
Debtors (Note 2)	19,000		
Bank	<u>144,400</u>		
	211,000		
<i>Less Current liabilities</i>			
Creditors	( 24,800)		
Working capital		186,200	
		<u>413,600</u>	
<i>Capital</i>			
Balance at 1 January 20X8		378,600	
Add Net profit:			
London		20,000	
Manchester		<u>15,000</u>	
		<u>413,600</u>	
<i>Notes:</i>			
	£	£	
(1) Stocks: London	38,000	(2) Bank: London	122,000
Manchester	7,000	Manchester	21,600
In transit (£2,000 + £600)	<u>2,600</u>	In transit	800
	<u>47,600</u>		<u>144,400</u>

### 1.13 Foreign branch accounts

The treatment of the accounts of foreign branches is subject to only one exception from that of branches in your own country. This is concerned with the fact that when the trial balance is drawn up by the branch then this will be stated in a foreign currency. To amalgamate these figures with your own country's figures will mean that the foreign branch figures will have to be translated into your currency.

There are rules for general guidance as to how this can be done. These are given in SSAP 20: *Foreign currency translation*. These are the ones which will be shown. (Before you read further you should check whether or not this topic is part of your examination requirements.) The equivalent international standard is discussed briefly in Section 1.16 below.

The amount of a particular currency which one can obtain for another currency is known as the exchange rate. Taking an imaginary country with a currency called *chips*, there might be a general agreement that the exchange rate should stay about 5 chips to equal £1. At certain times the exchange rate will exactly equal that figure, but due to all sorts of economic reasons it may well be 5.02 chips to £1 on one day and 4.97 chips to £1 several days later. In addition, some years ago there may have been an act of devaluation by one of the countries involved; the exchange rate could then have been 3 chips to £1. To understand more about exchange rates and devaluation, the reader is advised to consult a relevant economics textbook.

It is clear, however, that all items in the trial balance should not be converted to your currency on the basis of the exchange rate ruling at the date of the trial balance. The rules in SSAP 20 have been devised in an attempt to bring about conversion into your currency so as not to distort reported trading results.

### 1.14 SSAP 20 conversion rules

- 1 (a) Fixed assets at the exchange rate ruling when the assets were bought – the **temporal method**. If fixed assets have been bought on different dates, then different rates will have to be used for each separate purchase.
- (b) Depreciation on the fixed assets at the same rate as the fixed assets concerned.
- 2 Current assets and current liabilities – at the rate ruling at the date of the trial balance. This is known as the **closing method**.
- 3 Opening stock in the trading account – at the rate ruling at the previous balance sheet date.
- 4 Goods sent by the head office to the branch, or returns from the branch – at the actual figures shown in the Goods Sent to Branches Account in the head office books.
- 5 Trading and profit and loss account items, other than depreciation, opening and closing stocks, or goods sent to or returned by the branch – at the average rate for the period covered by the accounts.
- 6 The Head Office Current Account – at the same figures as shown in the Branch Current Account in the head office books.

### 1.15 Conversion of trial balance figures

When the conversion of the figures into your currency is completed, the totals of the debit and credit sides of your currency trial balance will not normally be equal to one another. This is due to different exchange rates being taken for conversion purposes. A balancing figure will therefore be needed to bring about the equality of the totals. For this purpose, a **difference on exchange account** will be opened in which a debit entry will be made if the lesser total is on the debit side of the trial balance. When the head office redrafts the profit and loss account any debit balance on



the difference on exchange account should be transferred to it as an expense. A credit balance on the difference on exchange account should be transferred to the credit of the profit and loss account as a gain.

In consolidated accounts, special rules are applied for foreign exchange conversion.

### Exhibit 1.8

An example of the conversion of a trial balance into UK currency is now shown. The branch is in Flavia, and the unit of currency is the Flavian dollar. The exchange rates needed are:

- (a) On 1 January 20X3, 10 dollars = £1
- (b) On 1 January 20X5, 11 dollars = £1
- (c) On 1 January 20X8, 17 dollars = £1
- (d) On 31 December 20X8, 15 dollars = £1
- (e) If no further information were given the average rate for 20X8 would have to be taken as (c) + (d) ÷ 2, i.e. 16 dollars = £1. This is not an advisable procedure in practice; the fact that the average has been calculated from only two readings could mean that the average calculated might be far different from a more accurate one calculated from a larger number of readings.

Trial Balance as at 31 December 20X8					
	Dr (F\$)	Cr (F\$)	Exchange rates	Dr (£)	Cr (£)
Fixed assets:					
Bought 1 Jan 20X3	10,000		10 = £1	1,000	
Bought 1 Jan 20X5	8,800		11 = £1	800	
Stock 1 Jan 20X8	6,800		17 = £1	400	
Expense accounts	8,000		16 = £1	500	
Sales		32,000	16 = £1		2,000
Goods from Head Office	21,900		£ per account in Head Office books	1,490	
Head Office current account		43,000	£ per account in Head Office books		3,380
Debtors	9,000		15 = £1	600	
Creditors		4,500	15 = £1		300
Bank	15,000		15 = £1	1,000	
	<u>79,500</u>	<u>79,500</u>		<u>5,790</u>	<u>5,680</u>
Difference on exchange account					<b>110</b>
				<u>5,790</u>	<u>5,790</u>

The value of the stock at 31 December 20X8 is 12,000 Flavian dollars. When the trading account is drawn up, this is converted at F\$15 = £1, i.e. £800.

## 1.16 IAS 21 (The effects of changes in foreign exchange rates)

Under IAS 21, at each balance sheet date:

- closing rate is used to translate foreign currency monetary items
- non-monetary items measured using historical cost in a foreign currency are translated using the transaction date exchange rate
- other non-monetary items are translated using the exchange rate at the date their fair value was determined
- exchange rate differences on the settlement of monetary items are generally recognised in profit or loss

- when translating a foreign operation, assets and liabilities are translated at closing rate. Income and expenses are translated at transaction date exchange rates. All resulting exchange differences are recognised as a separate component of equity.

## Learning outcomes

You should now have learnt:

- There are two main methods used to record transactions of the branches of an organisation:
  - all accounting records are kept by the head office
  - each branch has its own full accounting system.
- When all sales are for cash a double column trading and profit and loss account can be used in order to monitor any unexpected losses.
- When some sales are on credit, either memoranda columns can be used in the branch stock account in order to monitor stock or stock control can be integrated into the double entry system.
- Foreign branch figures need to be translated using the principles set down in SSAP 20: *Foreign currency translation* or IAS 21: *The effects of changes in foreign exchange rates*.

## Answers to activities

- When a second branch or head office is also involved in receiving payments from debtors of another branch, the focus of control shifts from being purely connected with one branch. More sophisticated methods of recording the transaction data are therefore required.
- They are merely a measure of the resources at the branch. The underlying assets and liabilities they represent are already included in the balance sheet.

## Review questions

**1.1** D Little Ltd has a branch in Bath at which a full set of books is kept. At the end of the year the following summary is compiled of the transactions between the branch and the head office as recorded in the latter's books:

	£
Balance due from branch 1 April	60,480
Cash received from branch	90,000
Goods supplied to branch	69,480
Goods returned by branch	1,200
Expenses paid on behalf of branch	11,000

At 30 September the branch profit and loss account showed a net profit of £42,000 for the six months.

- Show the above items as they would appear in the ledger of the head office.
- How can any resulting balance from these figures be proved, and what does it indicate?

**1.2** Squid Ltd, whose head office is in Aberdeen, operates a branch in Dundee. All goods are purchased by head office and invoiced to and sold by the branch at cost plus 50 per cent.



Other than a sales ledger kept in Dundee, all transactions are recorded in the books in Aberdeen. The following particulars are given of the transactions at the branch during the year ended 30 June 20X6.

	£
Stock on hand, 1 July 20X5, at invoice price	26,400
Debtors on 1 July 20X5	23,676
Stock on hand, 30 June 20X6, at invoice price	23,688
Goods sent from Aberdeen during the year at invoice price	148,800
Credit sales	126,000
Cash sales	14,400
Returns to head office at invoice price	6,000
Invoice value of goods stolen	3,600
Bad debts written off	888
Cash from debtors	134,400
Normal loss at invoice price due to wastage	600
Cash discount allowed to debtors	2,568

**You are required to** write up the branch stock account and branch total debtors account for the year ended 30 June 20X6, as they would appear in the head office books, showing clearly any abnormal wastage.

**1.3** RST Limited is a family-controlled company which operates a chain of retail outlets specialising in motor spares and accessories.

Branch stocks are purchased by a centralised purchasing function in order to obtain the best terms from suppliers.

A 10 per cent handling charge is applied by head office to the cost of the purchases, and branches are expected to add 25 per cent to the resulting figure to arrive at normal selling prices, although branch managers are authorised to reduce normal prices in special situations. The effect of such reductions must be notified to head office.

On 1 April 20X6, a new branch was established at Derham. The following details have been recorded for the year ended 31 March 20X7:

	£
Purchase cost to head office of stock transferred to Derham	82,400
Derham branch sales: cash	89,940
credit	1,870
Stocks transferred from Derham to other branches, at normal selling prices	3,300
Authorised reductions from normal selling prices during the year	2,250

All records in respect of branch activities are maintained at head office, and the branch profit margin is dealt with through a branch stock adjustment account.

**Required:**

- (a) Prepare:
  - (i) the branch stock account (maintained at branch selling prices);
  - (ii) the branch stock adjustment account.

The *book stock* should be taken for this part of the question.
- (b) List four of the possible reasons for the stock difference revealed when a physical stocktaking at the Derham branch on 31 March 20X7 showed stock valued at selling prices amounting to £14,850.
- (c) State which of the following is the figure to be included in RST Limited's balance sheet at 31 March 20X7, for Derham branch stock:
  - (i) £11,138
  - (ii) £11,880
  - (iii) £10,800
  - (iv) None of these

Justify your choice with appropriate calculations.

(Chartered Institute of Management Accountants)

**1.4A** Paper Products has a head office in London and a branch in Bristol. The following information has been extracted from the head office books of account as at 31 March 20X6:

**Information relating to the branch**

<i>Balances</i>	<i>Opening £000</i>	<i>Closing £000</i>
Branch bank account (positive balance)	3	12
Branch debtors	66	81
Branch stock (at transfer price)	75	90
<i>Transactions during the year</i>	<i>£000</i>	
Bad debts written off	15	
Branch general expenses (paid from bank branch account)	42	
Cash received from credit customers and banked	390	
Cash sales banked	120	
Cash transferred from branch to head office bank account	459	
Credit sales	437	
Discounts allowed to credit customers	9	
Goods returned by credit customers	8	
Goods returned from branch (at transfer price from head office)		30
Goods sent to branch (at transfer price from head office)		600

**Information relating to head office**

<i>Balances</i>	<i>Opening £000</i>	<i>Closing £000</i>
Stock	180	220
<i>Transactions during the year</i>	<i>£000</i>	
Bad debts written off	24	
Cash sales	1,500	
Credit sales	2,000	
Discounts allowed to credit customers	29	
General expenses	410	
Goods returned by credit customers	40	
Purchases	2,780	

*Additional information:*

- Most of the accounting records relating to the branch are kept by the head office in its own books of account.
- All purchases are made by the head office, and goods are invoiced to the branch at selling price, that is, at cost price plus 50 per cent.

**Required:**

- Write up the following ledger accounts for the year to 31 March 20X6, being careful to bring down any balances as at that date:
  - branch stock account;
  - goods sent to branch account;
  - branch stock adjustment account;
  - branch debtors account; and
  - branch bank account.
- Compile Paper Products' trading, and profit and loss account for the year to 31 March 20X6.
- Examine briefly the merits and demerits of Paper Products' method of branch bookkeeping including comments on the significance of the 'balancing figure' in the branch stock account.

(Association of Accounting Technicians)

**1.5** Packer and Stringer were in partnership as retail traders sharing profits and losses: Packer three-quarters, Stringer one-quarter. The partners were credited annually with interest at the rate of 6 per cent per annum on their fixed capitals; no interest was charged on their drawings.



Stringer was responsible for the buying department of the business. Packer managed the head office and Paper was employed as the branch manager. Packer and Paper were each entitled to a commission of 10 per cent of the net profits (after charging such commission) of the shop managed by him.

All goods were purchased by head office and goods sent to the branch were invoiced at cost.

The following was the trial balance as on 31 December 20X4.

	<i>Head Office Books</i>		<i>Branch Books</i>	
	<i>Dr</i>	<i>Cr</i>	<i>Dr</i>	<i>Cr</i>
	£	£	£	£
Drawings accounts and fixed capital accounts: Packer	2,500	14,000		
Stringer	1,200	4,000		
Furniture and fittings, at cost	1,500		1,100	
Furniture and fittings, provision for depreciation as at 31 December 20X3		500		350
Stock on 31 December 20X3	13,000		4,400	
Purchases	37,000			
Goods sent to branches		18,000	17,200	
Sales		39,000		26,000
Provision for doubtful debts		600		200
Branch and head office current accounts	6,800			3,600
Salaries and wages	4,500		3,200	
Paper, on account of commission			240	
Carriage and travelling expenses	2,200		960	
Administrative expenses	2,400			
Trade and general expenses	3,200		1,800	
Sundry debtors	7,000		3,000	
Sundry creditors		5,800		400
Bank balances	600			1,350
	<u>81,900</u>	<u>81,900</u>	<u>31,900</u>	<u>31,900</u>

You are given the following additional information:

- Stocks on 31 December 20X4 amounted to: head office £14,440, branch £6,570.
- Administrative expenses are to be apportioned between head office and the branch in proportion to sales.
- Depreciation is to be provided on furniture and fittings at 10 per cent of cost.
- The provision for doubtful debts is to be increased by £50 in respect of head office debtors and decreased by £20 in the case of those of the branch.
- On 31 December 20X4 cash amounting to £2,400, in transit from the branch to head office, had been recorded in the branch books but not in those of head office; and on that date goods invoiced at £800, in transit from head office to the branch, had been recorded in the head office books but not in the branch books.

Any adjustments necessary are to be made in the head office books.

**You are required to:**

- prepare trading and profit and loss accounts and the appropriation account for the year ended 31 December 20X4, showing the net profit of the head office and branch respectively;
- prepare the balance sheet as on that date; and
- show the closing entries in the branch current accounts giving the make-up of the closing balance.

Income tax is to be ignored.

(Institute of Chartered Accountants)

**1.6A** LR, a trader, commenced business on 1 January 20X9, with a head office and one branch.

All goods were purchased by the head office and goods sent to the branch were invoiced at a fixed selling price of 25 per cent above cost. All sales, both by the head office and the branch, were made at the fixed selling price.

The following trial balance was extracted from the books at the head office at 31 December 20X9.

Trial Balance		
	£	£
Capital		52,000
Drawings	1,740	
Purchases	123,380	
Sales		83,550
Goods sent to branch (at selling price)		56,250
Branch current account	24,550	
Fixed assets	33,000	
Debtors and creditors	7,980	11,060
General expenses	8,470	
Balance at bank	3,740	
	<u>202,860</u>	<u>202,860</u>

No entries had been made in the head office books for cash in transit from the branch to head office at 31 December 20X9, £1,000.

When the balances shown below were extracted from the branch books at 31 December 20X9, no entries had been made in the books of the branch for goods in transit on that date from head office to branch, £920 (selling price).

In addition to the balances which can be deduced from the information given above, the following balances appeared in the branch books on 31 December 20X9.

	£
Fixed assets	6,000
General expenses	6,070
Debtors	7,040
Creditors (excluding head office)	1,630
Sales	51,700
Balance at bank	1,520

When stock was taken on 31 December 20X9, it was found that there was no shortage at the head office, but at the branch there were shortages amounting to £300, at selling price.

**You are required to:** prepare trading and profit and loss accounts (a) for head office and (b) for the branch, as they would have appeared if goods sent to the branch had been invoiced at cost, and a balance sheet of the whole business as on 31 December 20X9.

Head office and branch stocks are to be valued at cost.

Ignore depreciation of fixed assets.

*(Institute of Chartered Secretaries and Administrators)*





**1.7** Nion is a retail stock outlet operating from a head office in London and a branch in Brighton. The following trial balances have been extracted from the books of account as at 31 October 20X1.

	Head Office Books		Branch Books	
	Dr	Cr	Dr	Cr
	£	£	£	£
Drawings	40,000			
Fixed assets: at cost	350,000		100,000	
accumulated depreciation (at 1 November 20X0)		140,000		30,000
Stock (at 1 November 20X0)	8,000		20,000	
Provision for unrealised profit		4,000		
Purchases	914,000			
Goods sent to branch at invoiced value		380,000	375,000	
Sales		850,000		437,000
Provision for doubtful debts		9,000		2,500
Head office/branch current accounts	175,000			120,000
Distribution expenses	80,500		5,000	
Administrative expenses	200,000		16,500	
Trade debtors	60,000		60,000	
Trade creditors		50,000		
Cash and bank balances	15,500		13,000	
Capital		410,000		
	<u>£1,843,000</u>	<u>£1,843,000</u>	<u>£589,500</u>	<u>£589,500</u>

*Additional information:*

- 1 All goods are purchased by the head office. Those goods sent to the branch are invoiced at cost plus 25 per cent.
- 2 Stocks were valued at 31 October 20X1 as being at head office, £12,000; and at the branch, £15,000 at their invoiced price.
- 3 Depreciation is to be provided for the year on the fixed assets at a rate of 10 per cent on the historic cost.
- 4 The provision for doubtful debts is to be maintained at a rate of 5 per cent of outstanding trade debtors as at the end of the financial year.
- 5 As at 31 October 20X1, there was £50,000 cash in transit from the branch to the head office; this cash was received in London on 3 November 20X1. There was also £5,000 of goods in transit at invoice price from the head office to the branch; the branch received these goods on 10 November 20X1.

**Required:**

Prepare in adjacent columns: (a) the head office, and (b) the branch trading and profit and loss accounts for the year to 31 October 20X1; and a **combined** balance sheet for Nion as at that date.

*Notes:*

- (i) a combined trading and profit and loss account is NOT required; and
- (ii) separate balance sheets for the head office and the branch are also NOT required.

(Association of Accounting Technicians)

**1.8A** Star Stores has its head office and main store in Crewe, and a branch store in Leek. All goods are purchased by the head office. Goods are invoiced to the branch at cost price plus a profit loading of 20 per cent. The following trial balances have been extracted from the books of account of both the head office and the branch as at 31 December 20X9:

	Head Office Books		Branch Books	
	Dr	Cr	Dr	Cr
	£000	£000	£000	£000
Administrative expenses	380		30	
Distribution costs	157		172	
Capital (at 1 January 20X9)		550		
Cash and bank	25		2	
Creditors and accruals		176		20
Current accounts	255			180
Debtors and prepayments	130		76	
Motor vehicles:				
at cost	470		230	
accumulated depreciation at 31 December 20X9		280		120
Plant and equipment:				
at cost	250		80	
accumulated depreciation at 31 December 20X9		120		30
Proprietor's drawings during the year	64			
Provision for unrealised profit on branch stocks				
at 1 January 20X9		5		
Purchases	880			
Sales		1,200		570
Stocks at cost/invoiced amount at 1 January 20X9	80		30	
Transfer of goods to the branch/from the head office		360	300	
	<u>£2,691</u>	<u>£2,691</u>	<u>£920</u>	<u>£920</u>

**Additional information:**

1 The stocks in hand at 31 December 20X9 were estimated to be as follows:

	£000
At head office (at cost)	100
At the branch (at invoiced price)	48

In addition, £60,000 of stocks at invoiced price had been despatched to the branch on 28 December 20X9. These goods had not been received by the branch until 5 January 20X0 and so they had not been included in the branch books of account.

2 On 31 December 20X9, the branch had transferred £15,000 of cash to the head office bank, but this was not received in Crewe until 2 January 20X0.

**Required:**

- Prepare in adjacent columns and using the vertical format: (i) the head office, and (ii) the branch trading and profit and loss accounts for the year to 31 December 20X9 (note: a combined profit and loss account is NOT required); and
- Prepare in the vertical format, Star Stores' balance sheet as at 31 December 20X9 (note: separate balance sheets for the head office and the branch are NOT required).

(Association of Accounting Technicians)







**1.9** EG Company Limited, a manufacturing business, exports some of its products through an overseas branch whose currency is 'florins', which carries out the final assembly operations before selling the goods.

The trial balances of the head office and branch at 30 June 20X8 were:

	Head Office		Branch	
	£	£	'Fl.'	'Fl.'
Freehold buildings at cost	14,000		63,000	
Debtors/creditors	8,900	9,500	36,000	1,560
Sales		104,000		432,000
Authorised and issued capital		40,000		
Components sent to branch		35,000		
Head office/branch accounts	60,100			504,260
Branch cost of sales			360,000	
Depreciation provision, machinery		1,500		56,700
Head office cost of sales (including goods to branch)	59,000			
Administration costs	15,200		18,000	
Stock at 30 June 20X8	28,900		11,520	
Profit and loss account		2,000		
Machinery at cost	6,000		126,000	
Remittances		28,000	272,000	
Balance at bank	4,600		79,200	
Selling and distribution costs	23,300		28,800	
	<u>220,000</u>	<u>220,000</u>	<u>994,520</u>	<u>994,520</u>

The following adjustments are to be made:

- 1 The cost of sales figures include a depreciation charge of 10 per cent per annum on cost for machinery.
- 2 A provision of £300 for unrealised profit in branch stock is to be made.
- 3 On 26 June 20X8 the branch remitted 16,000 'Fl.'; these were received by the head office on 4 July and realised £1,990.
- 4 During May a branch customer in error paid the head office for goods supplied. The amount due was 320 'Fl.' which realised £36. It has been correctly dealt with by head office but not yet entered in the branch books.
- 5 A provision has to be made for a commission of 5 per cent of the net profit of the branch after charging such commission, which is due to the branch manager.

The rates of exchange were:

At 1 July 20X7	10 'Fl.' = £1
At 30 June 20X8	8 'Fl.' = £1
Average for the year	9 'Fl.' = £1
On purchase of buildings and machinery	7 'Fl.' = £1

**You are required to prepare, for internal use:**

- (a) detailed operating accounts for the year ended 30 June 20X8;
- (b) combined head office and branch balance sheet as at 30 June 20X8;
- (c) the branch account in the head office books, in both sterling and currency, the opening balance on 1 July 20X7 being £25,136 (189,260 'Fl.').

Taxation is to be ignored.

(Chartered Institute of Management Accountants)

**1.10** OTL Ltd commenced business on 1 January 20X0. The head office is in London and there is a branch in Highland. The currency unit of Highland is the crown.

The following are the trial balances of the head office and the Highland branch as at 31 December 20X0:

	<i>Head Office</i>		<i>Highland Branch</i>	
	£	£	Crowns	Crowns
Branch account	65,280			
Balances at bank	10,560		66,000	
Creditors		21,120		92,400
Debtors	18,480		158,400	
Fixed assets (purchased 1 January 20X0)	39,600		145,200	
Head office account				316,800
Profit and loss account (net profit for year)		52,800		79,200
Issued share capital		86,400		
Stocks	<u>26,400</u>		<u>118,800</u>	
	<u>160,320</u>	<u>160,320</u>	<u>488,400</u>	<u>488,400</u>

The trial balance of the head office was prepared before any entries had been made in respect of any profits or losses of the branch.

Remittances from head office to branch and from branch to head office were recorded in the books at the actual amounts paid and received.

The rates of exchange were:

On 1 January 20X0	5 crowns = £1
Average rate for year 20X0	4.4 crowns = £1
On 31 December 20X0	4 crowns = £1

**Required:**

- The trial balance of the Highland branch as at 31 December 20X0, in sterling.
  - The closing entries, as at 31 December 20X0, in the branch account in the books of the head office.
  - A summary of the balance sheet of OTL Ltd as at 31 December 20X0.
- Ignore depreciation of fixed assets.  
Ignore taxation.

*(Institute of Chartered Secretaries and Administrators)*

**1.11A** Home Ltd is incorporated in the UK and rents mobile homes to holidaymakers in this country and in Carea. The company has a head office in London and a branch in Carea where the local currency is 'Mics'. The following balances are extracted from the books of the head office and its 'self-accounting' branch at 31 December 20X4.

	<i>Head Office</i>	<i>Branch</i>
	£	Mics
Debit balances		
Fixed assets at cost	450,000	900,000
Debtors and cash	17,600	36,000
Operating costs	103,700	225,000
Branch current account	<u>42,600</u>	
	<u>613,900</u>	<u>1,161,000</u>
Credit balances		
Share capital	200,000	—
Retained profit, 1 January 20X4	110,800	—
Sales revenue	186,300	480,000
Creditors	9,700	25,000
Head office current account	—	420,000
Accumulated depreciation	<u>107,100</u>	<u>236,000</u>
	<u>613,900</u>	<u>1,161,000</u>



The following information is provided regarding exchange rates, some of which is relevant.

The fixed assets of the branch were acquired when there were 8 Mics to the £. Exchange rates ruling during 20X4 were:

	<i>Mics to the £</i>
1 January	6
Average	5
31 December	4

There are no cash or goods in transit between head office and branch at the year end.

**Required:**

The final accounts of Home Ltd for 20X4. The accounts should be expressed in £s sterling and, for this purpose, the conversion of Mics should be made in accordance with the temporal method of translation as specified in SSAP 20: *Foreign currency translation*.

*(Institute of Chartered Secretaries and Administrators)*

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Hire purchase accounts

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the term 'hire purchase'
- explain what distinguishes hire purchase from outright purchase
- explain what distinguishes hire purchase from a lease
- record the entries relating to hire purchase transactions

## Introduction

In this chapter you'll learn about the nature of hire purchase; of the difference to the cost to the buyer of paying the same amount each period as compared with paying a variable amount linked to the outstanding amount owed; and the accounting treatment and entries required when hire purchase transactions occur. You will also be introduced to leases and to the differences between leases and hire purchase agreements.

### 2.1 Nature of hire purchase

**Hire purchase** is a means of buying assets that avoids the need to pay in full either at the time of purchase or very soon thereafter. The essential differences between a hire purchase and a 'normal' purchase are:

- 1 The asset does not belong to the purchaser when it is received from the supplier. Instead it belongs to the supplier providing the hire purchase.
- 2 The purchaser will pay for the item by instalments over a period of time. This may be for as long as two or three years, or even longer.
- 3 The cost to the buyer will be higher than it would have been had the item been paid for at the time of purchase. The extra money paid is for interest.
- 4 The asset does not legally belong to the purchaser until two things happen:
  - (a) the final instalment is paid, and
  - (b) the purchaser agrees to a legal option to buy the asset.

If the purchasers want to, they could stop paying the instalments. They would then have to give the asset back to the seller. They would not be able to get a refund of instalments already paid.

If the purchaser is unable to continue paying the instalments, the seller could normally repossess the asset. The seller would keep all the instalments already paid.

**Activity  
2.1**

Why do you think organisations purchase assets on hire purchase?

**2.2 Law of hire purchase**

The Hire Purchase Act 1964 governs all hire purchase transactions in the UK.

**2.3 Interest payable on hire purchase**

Each payment made on a hire purchase contract consists of two things:

- 1 **Capital.** Paying off some of the amount owing for the cash price of the asset;
- 2 **Interest.** Paying off some of the interest that has accrued since the last instalment was paid.

The total payment (1) + (2) made for each instalment may be the same, or may differ. Normally, however, the same amount in total is paid each time an instalment is due.

**Exhibit 2.1 Unequal instalments**

- 1 A computer is bought from A King at the start of year 1. Cash price is £2,000.
- 2 Hire purchase price is £2,300.
- 3 Payable in two annual instalments at the end of each year. Each instalment to be £1,000 plus interest accrued for that year.
- 4 Rate of interest is 10 per cent per annum.

		£
Year 1: Cash price	(A)	2,000
Add Interest 10% of (A) £2,000		<u>200</u>
		2,200
Less Instalment paid		(1,200)
Owing at end of year 1	(B)	1,000
Year 2: Add Interest 10% of (B) £1,000		<u>100</u>
		1,100
Less Instalment paid		(1,100)
Owing at end of year 2		<u><u>—</u></u>

**Exhibit 2.2 Equal instalments**

The facts are the same as in Exhibit 2.1, except that each instalment is £1,152. (Each figure of interest is rounded down to the nearest £.)

		£
Year 1: Cash price	(A)	2,000
Add Interest 10% of (A) £2,000		<u>200</u>
		2,200
Less Instalment paid		(1,152)
Owing at end of year 1	(B)	1,048
Year 2: Add Interest 10% of (B) £1,048		<u>104</u>
		1,152
Less Instalment paid		(1,152)
Owing at end of year 2		<u><u>—</u></u>

**Note:** The interest for year 1 is the same for both equal and unequal instalments, as the whole of the cash price is owed in both cases for a full year.

**Activity 2.2**

Why is the amount paid in Year 2 in Exhibit 2.2 different from the amount paid in Year 2 in Exhibit 2.1?

## 2.4 Accounting for hire purchase

Accounting treats assets bought on hire purchase as though they belonged immediately to the purchaser.

This is because businesses normally buy assets on hire purchase with the intention of paying all the instalments, so that the asset finally will belong to them. As they mean to keep the asset and legally own it on the final payment, accounting enters it as though legal ownership occurred on purchase.

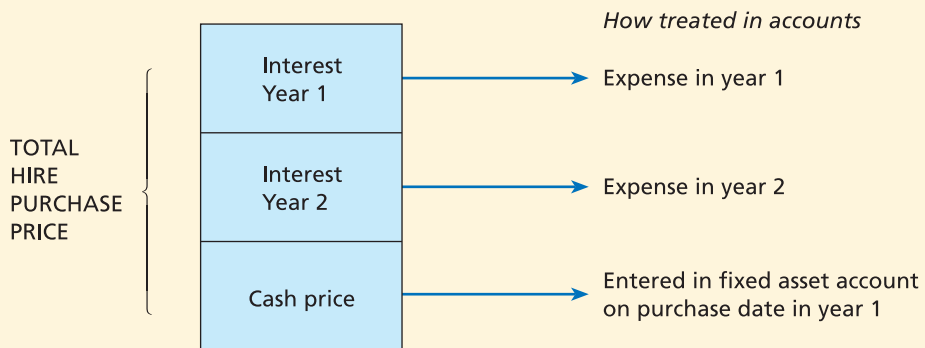
This is an illustration of the use of the ‘substance over form’ concept. Legally the firm does not yet own the asset (form) yet it does own it from an economic perspective (substance).

The total purchase price is split into two parts for the financial statements:

- 1 **Cash price.** This is the amount to be debited to the fixed asset account.
- 2 **Interest.** This is an expense of borrowing money and needs charging to an expense account, i.e. hire purchase interest account.

**As interest accrues over time, each period should be charged only with the interest accrued for that period.** This is shown in Exhibit 2.3.

### Exhibit 2.3



## 2.5 Illustrations of purchaser's accounts

The double entry needed is:

- |  |  |
|--|--|
| (A) Cash price:  | Debit fixed asset<br>Credit supplier                   |
| (B) Hire purchase interest (for each period's interest): | Debit hire purchase interest<br>Credit supplier        |
| (C) Hire purchase instalments:                           | Debit supplier<br>Credit cash book                     |
| (D) Charge interest to profit and loss:                  | Debit profit and loss<br>Credit hire purchase interest |

## Part 1 ● Special accounts

We can now look at the ledger accounts which would have been used to enter the facts as in Exhibit 2.1. (For simplicity, depreciation has been omitted from the example.) Letters entered against the entries refer to the double entries given above.

Computer						
			£			
Year 1						
Jan	1	A King	(A)	2,000		
Hire Purchase Interest						
			£	£		
Year 1						
Dec	31	A King	(B)	<u>200</u>	Dec	31 Profit and loss (D) <u>200</u>
Year 2						
Dec	31	A King	(B)	<u>100</u>	Dec	31 Profit and loss (D) <u>100</u>
A King						
			£	£		
Year 1						
Dec	31	Bank	(C)	1,200	Jan	1 Computer (A) 2,000
Dec	31	Balance c/d		<u>1,000</u>	Dec	31 HP interest (B) <u>200</u>
				<u>2,200</u>	<u>2,200</u>	
Year 2						
Dec	31	Bank	(C)	1,100	Jan	1 Balance b/d 1,000
				<u>1,100</u>	Dec	31 HP interest (B) <u>100</u>
					<u>1,100</u>	
Cash Book						
				£		
Year 1						
				Dec	31 A King	(C) 1,200
Year 2						
				Dec	31 A King	(C) 1,100
Profit and Loss Account (Extracts)						
			£			
Year 1 Hire purchase interest			(D)	200		
Year 2 Hire purchase interest			(D)	100		

## 2.6 Depreciation and assets bought on hire purchase

Depreciation is based on the cash price. Hire purchase interest is an expense in the profit and loss account and so does not enter depreciation calculations.

## 2.7 Balance sheets and assets bought on hire purchase

In the balance sheet for a sole trader or partnership, fixed assets being bought on hire purchase can be shown as follows:

<i>Fixed assets</i>	£	£
Machinery at cost <sup>(1)</sup>		20,000
Less Owing on hire purchase <sup>(2)</sup>	6,000	
Depreciation to date	<u>10,000</u>	
		(16,000)
		<u>4,000</u>

**Notes****(1) This is the cash price of the machinery.****(2) This is the amount of the original cash price still unpaid.**

In Exhibit 2.1 above, if the computer had been depreciated using the straight line method at 25 per cent, the balance sheet entries would have been:

**Balance Sheet (end of year 1)**

<i>Fixed assets</i>	£	£
Computer at cost		2,000
Less Owing on hire purchase*	1,000	
Depreciation to date	<u>500</u>	
		(1,500)
		<u>500</u>

**\*This is the balance of A King's account and does not include interest.****Balance Sheet (end of year 2)**

<i>Fixed assets</i>	£	£
Computer at cost		2,000
Less Depreciation to date		(1,000)
		<u>1,000</u>

**Note: At the end of year 2 there was nothing owing to A King for hire purchase.**

However, in company balance sheets this is *not* allowed. The Companies Acts do not permit an amount owing on a hire purchase contract to be deducted from the value of the asset in the balance sheet.

In a company's balance sheet, the entries relating to Exhibit 2.1 would be:

**Balance Sheet (end of year 1)**

<i>Fixed assets</i>	£	£
Computer at cost		2,000
Less Depreciation to date		( 500)
		<u>1,500</u>
<i>Liabilities</i>		
Creditors (Owing on hire purchase)*		1,000

**\*This is the balance of A King's account and does not include interest.****Balance Sheet (end of year 2)**

<i>Fixed assets</i>		£
Computer at cost		2,000
Less Depreciation to date		(1,000)
		<u>1,000</u>



## 2.8 A fully worked example

Exhibit 2.4 illustrates hire purchase more fully. It covers three years of hire purchase and shows the balance sheet figures that would appear if sole traders and partnerships adopted the first approach shown in Section 2.7.

### Exhibit 2.4

- 1 A machine is bought by K Thomas for £3,618, hire purchase price, from Suppliers Ltd on 1 January 20X3.
- 2 It is paid by 3 instalments of £1,206 on 31 December of 20X3, 20X4 and 20X5.
- 3 The cash price is £3,000.
- 4 Rate of interest is 10 per cent.
- 5 Straight line depreciation of 20 per cent per annum is to be provided.

**Note:** The letters (A) to (F) refer to the description of entries following the account.

Machinery					
20X3				£	
Jan 1	Suppliers Ltd	(A)		3,000	
Suppliers Ltd					
20X3				£	
Dec 31	Bank	(B)		1,206	
Dec 31	Balance c/d	(D)		<u>2,094</u>	
				<u>3,300</u>	
20X4					
Dec 31	Bank	(B)		1,206	
Dec 31	Balance c/d	(D)		<u>1,097</u>	
				<u>2,303</u>	
20X5					
Dec 31	Bank	(B)		1,206	
				<u>1,206</u>	
Hire Purchase Interest					
20X3				£	
Dec 31	Suppliers Ltd	(C)		<u>300</u>	
20X4					
Dec 31	Suppliers Ltd	(C)		<u>209</u>	
20X5					
Dec 31	Suppliers Ltd	(C)		<u>109</u>	
Provision for Depreciation: Machinery					
20X3				£	
Dec 31	Profit and loss	(F)		600	
20X4					
Dec 31	Profit and loss	(F)		600	
20X5					
Dec 31	Profit and loss	(F)		600	

## Balance Sheets as at 31 December

	£	£	£
20X3 Machinery (at cost)		3,000	
Less Depreciation	600		
Owing on hire purchase agreement	<u>2,094</u>	(2,694)	
			306
20X4 Machinery (at cost)		3,000	
Less Depreciation to date	1,200		
Owing on hire purchase agreement	<u>1,097</u>	(2,297)	
			703
20X5 Machinery (at cost)		3,000	
Less Depreciation to date		(1,800)	
			<u>1,200</u>

*Description of entries:*

- (A) When the asset is acquired the cash price is debited to the asset account and the credit is in the supplier's account.
- (B) The instalments paid are credited to the bank account and debited to the supplier's account.
- (C) The interest is credited to the supplier's account for each period as it accrues, and it is debited to the expense account, later to be transferred to the profit and loss account for the period (E).
- (D) The balance carried down each year is the amount of the cash price still owing.
- (F) Depreciation provisions are calculated on the full cash price, as the depreciation of an asset is in no way affected by whether or not it has been fully paid for.

The balance sheet consists of balance (A), the cash price, less balance (F), the amount of the cash price apportioned as depreciation. Balance (D), the amount of the cash price still owing at each balance sheet date, is shown separately under creditors.

## 2.9 The seller's books: apportionment of profits

There are many ways of drawing up the final accounts of a business which sells goods on hire purchase. The method used should be the one most suitable for the business.

The total profit for the seller of goods on hire purchase breaks down as follows:

	£
Profit on item sold: Cash price less cost	xxx
Profit made because of interest charged	<u>xxx</u>
	<u>xxx</u>

In Exhibit 2.4, Suppliers Ltd sold a machine to K Thomas. Assume that the machine had cost Suppliers Ltd £2,100. The total profit upon the final instalment being paid is:

	£	£
Profit on sale of machine: Cash price	3,000	
Cost	<u>(2,100)</u>	
		900
Profit earned by charging interest: 20X3	300	
20X4	209	
20X5	<u>109</u>	
		<u>618</u>
Total profit over 3 years		<u>1,518</u>

### Apportionment of profit on sale

There are two main methods of dealing with the problem of how to split the £900 profit on sale of the machine:

- 1 It is considered profit in the period in which it was first sold to the purchaser. In this case the £900 would all be shown as profit for 20X3.
- 2 The profit is divided among the three years.

The ratio is calculated as follows:

$$\frac{\text{Cash received in period}}{\text{Total cash to be received}} \times \text{Profit}$$

In this case the profits will be shown as:

$$\begin{aligned} 20X3 \quad & \frac{£1,206}{£1,206 \times 3} \times £900 = \frac{1}{3} \times £900 = £300 \\ 20X4 \quad & \frac{£1,206}{£1,206 \times 3} \times £900 = \frac{1}{3} \times £900 = £300 \\ 20X5 \quad & \frac{£1,206}{£1,206 \times 3} \times £900 = \frac{1}{3} \times £900 = £300 \end{aligned}$$

Total profit on sale for three years £900

**This case shows equal profits because equal instalments were paid each year. Unequal payments would result in unequal profits.**

### Apportionment of interest to profit and loss account

The interest accrued for each period should be taken into profit calculations. As the amount owed reduces, so does the interest:

	£
Year 20X3	300
Year 20X4	209
Year 20X5	<u>109</u>
Total interest for the three years	<u>618</u>

## 2.10 The seller's books: accounts needed

We can now look at Exhibit 2.5 taking the details from Exhibit 2.4 as it would appear in the seller's books. Items (A) to (C) have already been shown in Exhibit 2.4.

### Exhibit 2.5

- The machine was sold on 1 January 20X3 to K Thomas on hire purchase terms. Cash price was £3,000 plus hire purchase interest.
- Hire purchase interest was at a rate of 10 per cent.
- There are to be three instalments of £1,206 each, receivable on 31 December of 20X3, 20X4 and 20X5. These were paid by K Thomas on the correct dates.
- This was the only hire purchase sale during the three years.
- The profit on the cash price is to be shown as profits for 20X3, the year in which the sale was made.
- The cost of the machine to Suppliers Ltd was £2,100.

**Hire Purchase Sales**

20X3		£		20X3		£
Dec 31	Trading	<u>3,000</u>		Jan 1	K Thomas (A)	<u>3,000</u>

**K Thomas**

20X3		£		20X3		£
Jan 1	Sales (A)	3,000		Dec 31	Bank (C)	1,206
Dec 31	HP interest (B)	<u>300</u>		Dec 31	Balance c/d	<u>2,094</u>
		<u>3,300</u>				<u>3,300</u>
20X4				20X4		
Jan 1	Balance b/d	2,094		Dec 31	Bank (C)	1,206
Dec 31	HP interest (B)	<u>209</u>		Dec 31	Balance c/d	<u>1,097</u>
		<u>2,303</u>				<u>2,303</u>
20X5				20X5		
Jan 1	Balance b/d	1,097		Dec 31	Bank (C)	1,206
Dec 31	HP interest (B)	<u>109</u>				<u>1,206</u>
		<u>1,206</u>				<u>1,206</u>

**Hire Purchase Interest**

20X3		£		20X3		£
Dec 31	Trading	<u>300</u>		Dec 31	K Thomas (B)	<u>300</u>
20X4				20X4		
Dec 31	Trading	<u>209</u>		Dec 31	K Thomas (B)	<u>209</u>
20X5				20X5		
Dec 31	Trading	<u>109</u>		Dec 31	K Thomas (B)	<u>109</u>

**Cost of Hire Purchase Goods**

20X3		£		20X3		£
Jan 1	Bank (F)	<u>2,100</u>		Dec 31	Trading	<u>2,100</u>

**Cash Book**

20X3		£		20X3		£
Dec 31	K Thomas (C)	1,206		Jan 1	Hire purchase goods (F)	2,100
20X4						
Dec 31	K Thomas (C)	1,206				
20X5						
Dec 31	K Thomas (C)	1,206				

**Trading Accounts***Year ended 31 December 20X3*

	£		£
Cost of goods sold	2,100	Hire purchase sales	3,000
		Hire purchase interest	300

*Year ended 31 December 20X4*

		£
	Hire purchase interest	209

*Year ended 31 December 20X5*

		£
	Hire purchase interest	109

In Exhibit 2.5 all the profit was taken as being earned in 20X3. If we decided to take the profit as being earned when the instalments are received, then the only account which would be altered would be the trading account. All the other accounts would be exactly the same as in Exhibit 2.5.

The amendments needed are shown as Exhibit 2.6.

### Exhibit 2.6

Trading Accounts			
Year ended 31 December 20X3			
	£		£
Cost of goods sold	2,100	Hire purchase sales	3,000
Hire purchase profit suspense profit not yet earned (G)	600	Hire purchase interest	300
Year ended 31 December 20X4			
			£
		Hire purchase profit suspense profit for 20X4 (H)	300
		Hire purchase interest	209
Year ended 31 December 20X5			
			£
		Hire purchase profit suspense profit for 20X5 (H)	300
		Hire purchase interest	109
Hire Purchase Profit Suspense			
20X3	£	20X3	£
Dec 31 Trading (H)	300	Dec 31 Trading (G)	600
Dec 31 Balance c/d	<u>300</u>		<u>600</u>
	<u>600</u>		
20X5		20X5	
Dec 31 Trading (H)	<u>300</u>	Jan 1 Balance b/d	<u>300</u>

The double entry needed was:

(G) In year of sale: Debit trading account with profits carried to future years  
Credit hire purchase profit suspense

(H) In following years: Debit hire purchase profit suspense with profits earned in each year  
Credit trading account

The entries for hire purchase interest have not changed.

## 2.11 Repossessions

When customers stop paying their instalments before they should do, the goods can be taken away from them. This is called **repossession**. The amounts already paid by the customers will be kept by the seller.

The repossessed items should be entered in the books of the seller, as they are now part of his stock, but they will not be valued as new stock. The items must be valued as used goods.

Exhibit 2.7 shows how the accounts must be changed.

- 1 On 1 January 20X4 we buy 15 electronic agendas for £300 each.
- 2 On 1 January 20X4 we sell 12 of them for a cash price of £480 plus £120 interest to be paid = £600 total.
- 3 24 monthly instalments are to be paid of £25 each = £600.
- 4 Because of the difficulties of apportioning interest, each instalment is taken to include £5 interest, i.e.  $24 \times £5 = £120$  interest.
- 5 On 1 November 20X4, after 10 instalments have been received, a customer who bought 2 of the agendas cannot pay any more instalments. Both of them are returned by him. We do not have to repay the instalments paid by him.
- 6 The 2 agendas returned are valued at £140 each. Also in stock on 31 December 20X4 are 3 of the agendas bought on 1 January 20X4 for £300 each and still valued at that.
- 7 Profit is to be calculated based on the number of instalments paid.

### Exhibit 2.7

#### Trading Account for the year ended 31 December 20X4

		£			£
Purchases	(a)	4,500	Sales at cash price	(b)	4,800
Less Stock	(e)	(1,180)	Hire purchase interest	(c)	600
Cost of goods sold		3,320	Instalments received on repossessions	(d)	500
Provision for unrealised profit	(f)	900			
Gross profit	(g)	1,680			
		<u>5,900</u>			<u>5,900</u>

#### Notes

Calculations are made as follows:

- (a)  $15 \times £300$  each = £4,500.
- (b) 10 were sold (and not returned) at cash price of £480 each.
- (c) Interest on 10 sold (and not returned)  $\times £5 \times 12$  months = £600.
- (d) 10 instalments paid (including interest) on 2 agendas =  $10 \times £25 \times 2 = £500$ .

	£	
(e) Stock = new items $3 \times £300$	=	900
repossessed items $2 \times £140$	=	280
		<u>1,180</u>
		£
(f) Profit per agenda = cash price £480 – cost £300	=	180
To be paid: 12 instalments out of 24 = $\frac{1}{2}$ profit	=	90
Number sold and not returned, $10 \times £90$	=	900
(g) Gross profit can be checked:		
Earned to date $10 \times £90$	=	900
Interest earned to date $£5 \times 10 \times 12$ months	=	600
Profit on repossessions:		
Instalments received	£	500
Loss of value on repossessions	£	
Cost $2 \times £300$	600	
Value taken back	(280)	= (320)
		<u>180</u>
		<u>1,680</u>

## 2.12 SSAP 21: Accounting for leases and hire purchase contracts

In August 1984, when SSAP 21 was issued, the reason for its introduction was described as follows.

Leasing and hire purchase contracts are means by which companies acquire the right to use (lease) or purchase (hire purchase) fixed assets. In the UK there is normally no provision in a lease contract for legal title to the leased asset to pass to the lessee during the term of a lease. In contrast, under a hire purchase contract the hirer may acquire legal title by exercising an option to purchase the asset upon fulfilment of certain conditions (normally the payment of an agreed number of instalments).

Lessors fall into three broad categories: (i) companies, including banks and finance houses, which provide finance under lease contracts to enable a single customer to acquire the use of an asset for the greater part of its useful life; (ii) they may operate a business which involves the renting out of assets for varying periods of time probably to more than one customer; or, (iii) they may be manufacturer or dealer lessors who use leasing as a means of marketing their products, which may involve leasing a product to one customer or to several customers.

As a lessor and lessee are both parties to the same transaction it is appropriate that the same definitions should be used and the accounting treatment recommended should ideally be complementary. However, because the pattern of cash flows and the taxation consequences will be different, this will not mean that the recorded balances in both sets of financial statements will be the same.

There are two types of leases: **finance leases** and **operating leases**. The distinction between a finance lease and an operating lease will usually be evident from the contract between the lessor and the lessee. A finance lease usually involves repayment to a lessor by a lessee of the full cost of the asset together with a return on the finance provided by the lessor. As such, a lease of this type is normally non-cancellable or cancellable only under certain conditions, and the lessee enjoys substantially all the risks and rewards associated with the ownership of an asset, other than the legal title. (This is very similar to a hire purchase contract.)

An operating lease involves the lessee paying a rental for the hire of an asset for a period of time which is normally substantially less than its useful economic life. The lessor retains the risks and rewards of ownership of an asset in an operating lease and normally assumes responsibility for repairs, maintenance and insurance.

SSAP 21 requires that a finance lease should be accounted for by the lessee as if it were the purchase of the proprietary rights in an asset with simultaneous recognition of the obligation to make future payments, in the same way that a hire purchase is normally accounted for. Under an operating lease, only the rental will be taken into account by the lessee. The asset involved does not appear in the balance sheet of the operating lease lessee. The standard recognises that the substance of a transaction rather than its legal form should govern the accounting treatment.

The international standard on this topic, IAS 17 (Leases) has virtually the same requirements as SSAP 20.

## Learning outcomes

You should now have learnt:

- 1 Hire purchase is a means of buying assets where:
  - (a) the asset does not belong to the purchaser until the final instalment is paid *and* the purchaser agrees to a legal option to buy the asset; *but*
  - (b) for accounting purposes, the asset is treated immediately as if it belonged to the purchaser.
- 2 Each payment made on a hire purchase contract is part interest and part payment of the cash price of the asset.
- 3 How to record the various entries relating to hire purchase.
- 4 How to treat hire purchase transactions in the trading and profit and loss account and balance sheet.
- 5 The difference between hire purchase and leasing.
- 6 The difference between a finance lease and an operating lease.

## Answers to activities

- 2.1 An organisation may have a shortage of cash, or may prefer to use its cash for other purposes. It may not wish to keep the asset permanently and may buy it on hire purchase so that after a couple of years it can stop paying the instalments. Sometimes, hire purchase is offered at zero interest so it is actually cheaper to purchase an item on hire purchase (because interest can be earned by the buyer on the amount not yet paid).
- 2.2 Because £48 less was paid in Exhibit 2.2 at the end of Year 1. Interest was charged at 10% on that £48, resulting in an additional £4 having to be paid in Year 2 as well as the £48 that was not paid in Year 1. Overall, this meant that the Year 2 payment in Exhibit 2.2 was £52 greater than in Exhibit 2.1. However, over the two years, the difference in cost to the buyer was the £4 interest that arose as a result of the first-year payment having been slightly lower in Exhibit 2.2.

## Review questions

**2.1** A printing company purchased a machine on hire purchase over a period of three years, paying £1,308 on 1 January 20X6, and further annual payments of £4,000 due on 31 December 20X6, 20X7 and 20X8.

The cash price of the machine was £12,000, the vendor company charging interest at 6 per cent per annum on outstanding balances.

Show the appropriate ledger accounts in the purchaser's books for the three years and how the items would appear in the balance sheet at 31 December 20X6; depreciation at 20 per cent per annum straight-line is to be charged and interest calculated to the nearest £.

**2.2A** On 1 January 20X5 P Wriggle bought a computer (cash price £1,046) from Dowe Ltd on the following hire purchase terms. Wriggle was to make an immediate payment of £300 and three annual payments of £300 on 31 December in each year. The rate of interest chargeable is 10 per cent per annum on the balance at the start of the year.



→ P Wriggle depreciates this computer by 40 per cent reducing balance each year.

- (a) Make the entries relating to this computer in Wriggle's ledger for the years 20X5, 20X6 and 20X7. (All calculations are to be made to the nearest £.)
- (b) Show how the item 'computer' would appear in the balance sheet as at 31 December 20X5.

**2.3** Bulwell Aggregates Ltd wish to expand their transport fleet and have purchased three heavy lorries with a list price of £18,000 each. Robert Bulwell has negotiated hire purchase finance to fund this expansion, and the company has entered into a hire purchase agreement with Granby Garages plc on 1 January 20X1. The agreement states that Bulwell Aggregates will pay a deposit of £9,000 on 1 January 20X1, and two annual instalments of £24,000 on 31 December 20X1, 20X2 and a final instalment of £20,391 on 31 December 20X3.

Interest is to be calculated at 25 per cent on the balance outstanding on 1 January each year and paid on 31 December each year.

The depreciation policy of Bulwell Aggregates Ltd is to write off the vehicles over a four-year period using the straight line method and assuming a scrap value of £1,333 for each vehicle at the end of its useful life.

The cost of the vehicles to Granby Garages is £14,400 each.

**Required:**

- (a) Account for the above transactions in the books of Bulwell Aggregates Ltd, showing the entries in the profit and loss account and balance sheet for the years 20X1, 20X2, 20X3 and 20X4.
- (b) Account for the above transactions in the books of Granby Garages plc, showing the entries in the hire purchase trading account for the years 20X1, 20X2, 20X3. This is the only hire purchase transaction undertaken by this company.

Calculations to the nearest £.

(Association of Accounting Technicians)

**2.4A** D Lane purchased two cars for his business under hire purchase agreements:

	DL 1	DL 2
Registration number		
Date of purchase	31 July 20X2	30 November 20X2
Cash price	£27,000	£36,000
Deposit	£4,680	£7,200
Interest (deemed to accrue evenly over the period of the agreement)	£2,880	£3,600

Both agreements provided for payment to be made in 24 monthly instalments commencing on the last day of the month following purchase.

On 1 September 20X3, vehicle DL 1 was involved in a crash and was declared a write-off. In full settlement on 20 September 20X3:

- (a) the motor insurers paid out £18,750, and
- (b) the hire purchase company accepted £10,700 for the termination of the agreement.

The firm prepares its financial statements to 31 December and provides depreciation on a straight line basis at a rate of 25 per cent per annum for motor vehicles, apportioned as from the date of purchase and up to the date of disposal.

All instalments were paid on the due dates.

The remaining balance on the hire purchase company account in respect of vehicle DL 1 is to be written off.

**Required:**

Record these transactions in the following accounts, carrying down the balances as on 31 December 20X2 and 31 December 20X3:

- (a) Motor vehicles
- (b) Depreciation
- (c) Hire purchase company
- (d) Assets disposal.

**2.5** On 31 March 20X4, D Biggs, who prepares his financial statements to 31 March, bought a lorry on hire purchase from Truck Fleet Ltd. The cash price of the lorry was £61,620. Under the terms of the hire purchase agreement, Biggs paid a deposit of £20,000 on 31 March 20X4, and two instalments of £23,981 on 31 March 20X5 and 20X6. The hire vendor charged interest at 10 per cent per annum on the balance outstanding on 1 April each year. All payments were made on the due dates.

Biggs maintained the motor lorry account at cost and accumulated the annual provision for depreciation, at 40 per cent on the reducing balance method, in a separate account. A full year's depreciation is charged in the year of purchase, irrespective of the date acquired.

**Required:**

- (a) Prepare the following accounts as they would appear in the ledger of D Biggs for the period of the contract:
  - (i) Truck Fleet Ltd
  - (ii) Motor lorry on hire purchase
  - (iii) Provision for depreciation of motor lorry
  - (iv) Hire purchase interest payable
- (b) Show how the above matters would appear in the balance sheet of D Biggs at 31 March 20X5.

Truck Fleet Ltd prepares its financial statements to 31 March, on which date it charges D Biggs with the interest due.

Make calculations to the nearest £.

**2.6** J Wild started business on 1 April 20X2 selling one model of digital cameras on hire purchase. During the year to 31 March 20X3 he purchased 2,000 cameras at a uniform price of £90 and sold 1,900 cameras at a total selling price under hire purchase agreements of £150 per camera, payable by an initial deposit of £45 and 10 quarterly instalments of £10.50p.

The following trial balance was extracted from Wild's books as at 31 March 20X3.

	£	£
Capital		136,026
Drawings	40,000	
Fixed assets	9,500	
Purchases	180,000	
Cash collected from customers		125,400
Rent, business rates and insurance	5,000	
Wages	27,000	
General expenses	5,100	
Balance at bank	7,246	
Sundry trade creditors		12,600
	<u>274,026</u>	<u>274,026</u>

The personal accounts of customers are memorandum records (i.e. they are not part of the double entry system).

Wild prepares his financial statements on the basis of taking credit for profit (including interest) in proportion to cash collected from customers.

Prepare Wild's hire purchase trading account and a profit and loss account for the year ended 31 March 20X3 and a balance sheet as at that date.

Ignore depreciation of fixed assets.





**2.7** RJ commenced business on 1 January 20X8. He sells refrigerators, all of one standard type, on hire purchase terms. The total amount, including interest, payable for each refrigerator, is £300. Customers are required to pay an initial deposit of £60, followed by eight quarterly instalments of £30 each. The cost of each refrigerator to RJ is £200.

The following trial balance was extracted from RJ's books as on 31 December 20X8.

Trial Balance		
	£	£
Capital		100,000
Fixed assets	10,000	
Drawings	4,000	
Bank overdraft		19,600
Creditors		16,600
Purchases	180,000	
Cash collected from customers		76,500
Bank interest	400	
Wages and salaries	12,800	
General expenses	5,500	
	<u>£212,700</u>	<u>£212,700</u>

850 machines were sold on hire purchase terms during 20X8.

The annual accounts are prepared on the basis of taking credit for profit (including interest) in proportion to the cash collected from customers.

**You are required to** prepare the hire purchase trading account, and the profit and loss account for the year 20X8 and balance sheet as on 31 December 20X8.

Ignore depreciation of fixed assets.

Show your calculations.

*(Institute of Chartered Secretaries and Administrators)*

**2.8A** Object Limited is a retail outlet selling word processing equipment both for cash and on hire purchase terms. The following information has been extracted from the books of account as at 31 August 20X6:

	Dr £	Cr £
Authorised, issued and fully paid share capital (ordinary shares of £1 each)		75,000
Administration and shop expenses	130,000	
Cash at bank and in hand	6,208	
Cash received from hire purchase customers		315,468
Cash sales		71,000
Depreciation of premises and equipment (at 1 September 20X5)		45,000
Hire purchase debtors (at 1 September 20X5)	2,268	
Premises and equipment at cost	100,000	
Profit and loss account (at 1 September 20X5)		8,000
Provision for unrealised profit (at 1 September 20X5)		1,008
Purchases	342,000	
Stock (at 1 September 20X5)	15,000	
Trade creditors		80,000
	<u>£595,476</u>	<u>£595,476</u>

*Additional information:*

- The company's policy is to take credit for gross profit (including interest) for hire purchase sales in proportion to the instalments collected. It does this by raising a provision against the profit included in hire purchase debtors not yet due.

- 2 The cash selling price is fixed at 50 per cent and the hire purchase selling price at 80 per cent respectively above the cost of goods purchased.
- 3 The hire purchase contract requires an initial deposit of 20 per cent of the hire purchase selling price, the balance to be paid in four equal instalments at quarterly intervals. The first instalment is due three months after the agreement is signed.
- 4 Hire purchase sales for the year amounted to £540,000 (including interest).
- 5 In February 20X6 the company repossessed some goods which had been sold earlier in the year. These goods had been purchased for £3,000, and the unpaid instalments on them amounted to £3,240. They were then taken back into stock at a value of £2,500. Later on in the year they were sold on cash terms for £3,500.
- 6 Depreciation is charged on premises and equipment at a rate of 15 per cent per annum on cost.

**Required:**

Prepare Object Limited's trading, and profit and loss account for the year to 31 August 20X6, and a balance sheet as at that date.

Your workings should be submitted.

(Association of Accounting Technicians)

**2.9A** On 1 January 20X6, F Limited commenced business selling goods on hire purchase. Under the terms of the agreements, an initial deposit of 20 per cent is payable on delivery, followed by four equal quarterly instalments, the first being due three months after the date of sale. During the year sales were made as follows:

	Cost price	HP sales price
	£	£
10 January	150	225
8 March	350	525
12 May	90	135
6 July	200	300
20 September	70	105
15 October	190	285
21 November	160	240

The goods sold in July were returned in September and eventually sold in November for £187 cash. All other instalments are paid on the due dates.

It may be assumed that:

- (a) gross profit and interest are credited to profit and loss account in the proportion that deposits and instalments received bear to hire purchase price; or
- (b) the cost is deemed to be paid in full before any credit is taken for gross profit and interest.

You are to prepare for the first year of trading, a hire purchase trading account compiled firstly on assumption (a) and secondly on assumption (b) and give the relevant balance sheet entries under each assumption.

Workings should be clearly shown.

(Chartered Institute of Management Accountants)

**2.10A** On 1 January 20X7, Carver bought a machine costing £20,000 on hire purchase. He paid a deposit of £6,000 on 1 January 20X7 and he also agreed to pay two annual instalments of £5,828 on 31 December in each year, and a final instalment of £5,831 on 31 December 20X9.

The implied rate of interest in the agreement was 12 per cent. This rate of interest is to be applied to the amount outstanding in the hire purchase loan account as at the beginning of the year.

The machine is to be depreciated on a straight line basis over five years on the assumption that the machine will have no residual value at the end of that time.



**Required:**

- (a) Write up the following accounts for each of the three years to 31 December 20X7, 20X8 and 20X9 respectively:
  - (i) machine account;
  - (ii) accumulated depreciation on machine account; and
  - (iii) hire purchase loan account; and
- (b) Show the balance sheet extracts for the year as at 31 December 20X7, 20X8 and 20X9 respectively for the following items:
  - (i) machine at cost;
  - (ii) accumulated depreciation on the machine;
  - (iii) long-term liabilities: obligations under hire purchase contract; and
  - (iv) current liabilities: obligations under hire purchase contract.

(Association of Accounting Technicians)

**2.11** Dundas Limited purchased a machine under a hire purchase agreement on 1 January 20X8. The agreement provided for an immediate payment of £2,000, followed by five equal instalments of £3,056, each instalment to be paid on 30 June and 31 December respectively.

The cash price of the machine was £10,000. Dundas estimated that it would have a useful economic life of five years, and its residual value would then be £1,000.

In apportioning interest to respective accounting periods, the company uses the 'sum of digits'<sup>Note</sup> method.

**Required:**

- (a) Write up the following ledger accounts for each of the three years to 31 December 20X8, 20X9 and 20X0 respectively:
  - (i) machine hire purchase loan account; and
  - (ii) machine hire purchase interest account; and
- (b) Show the following balance sheet extracts relating to the machine as at 31 December 20X8, 20X9 and 20X0 respectively:
  - (i) fixed assets: machine at net book value;
  - (ii) creditors: amounts payable within one year – obligation under hire purchase contract; and
  - (iii) creditors: amounts falling due after more than one year – obligation under hire purchase contract.

**Authors' note – Sum of digits**

This is very similar to the 'rule of 78', explained in Section 45.12. It is explained in detail in Section 37.15 of the tenth edition of *Business Accounting 1*. In brief, if a machine is expected to last 4 years, you write off the cost by weighting year 1 as 4, year 2 as 3, year 3 as 2 and year 4 as 1. The total of these weights is used as the denominator. Thus, year 1 depreciation would be 4/10 of the amount to be written off; year 2 would be 3/10, year 3 would be 2/10 and year 4 would be 1/10.

(Association of Accounting Technicians)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# COMPANIES



## Introduction

This part is concerned with the accounts and financial statements of limited companies. It considers how various accounting transactions should be entered in the books and how the financial statements should be presented, including the requirements of the Companies Acts and of accounting standards.

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# Limited companies: general background

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the legal nature of limited companies
- explain the importance of the concept of limited liability
- describe the statutory framework governing limited companies
- describe some of the major characteristics of limited companies
- explain the difference between the Memorandum of Association and the Articles of Association

## Introduction

In this chapter, you'll learn about the legislation that governs how companies are formed and lays out the rules within which companies operate. You'll learn about the importance of limited liability and of the relationship between companies, their shares and the stock exchange.

### 3.1 Preliminary study

An introduction was made to the financial statements of limited companies in *Business Accounting 1*. It was intended to show some of the basic outlines of the financial statements of limited companies to those people who would be finishing their studies of accounting with the completion of *Business Accounting 1*. This volume now carries the study of limited companies accounting to a more advanced stage.

### 3.2 The Companies Acts

The Acts of Parliament governing limited companies in the UK are the Companies Acts 1985 and 1989. The 1989 Act both adds to and amends the 1985 Act, so that both Acts have to be read together. In this volume, we cannot deal with many of the complicated issues arising from the Companies Acts. These are better left until readers have reached a more advanced stage in their studies.

The Companies Acts are the descendants of modern limited liability company legislation which can be traced back to the passing of the Companies Act 1862. This Act was a triumph for the development of the limited liability principle which had been severely restricted since the 'Bubble Act' of 1720, which was introduced to address a multitude of spectacular frauds



perpetrated behind the cloak of limited liability. Not until 1862 was prejudice against the principle of limited liability overcome, and the way paved for the general use of the limited liability principle which is now commonplace. Company law consists of the Companies Acts 1985 and 1989, together with a considerable body of case law which has been built up over the years. It must be borne in mind that there are still a number of chartered companies in existence which were incorporated either by Royal Charter, such as the Hudson's Bay Company, or by special Acts of Parliament.

### 3.3 Changes in company law

Company law has changed considerably since the mid-1960s. This has been brought about largely because of the obligation to observe the company law directives issued by the Council of the European Community. Such changes have not completely eliminated the differences in company law throughout the European Union, but they have considerably reduced such differences and have provided a set of minimum common standards to be observed.

The 1985 and 1989 Companies Acts lay down detailed rules of the format of the financial statements of limited companies. These will be considered later.

Banks and insurance companies do not come under the same legislation as that which applies to other companies. A separate part of the 1989 Act deals with banks, while insurance companies are the subject of a special directive.

### 3.4 Other forms of company

The Companies Acts also cover companies with unlimited liability, of which there are very few. They also cover companies limited by guarantee, which may or may not have share capital, though the Companies Act 1985 forbids the future formation of such companies unless they do have share capital. Both of these types of limited company and chartered companies are relatively unimportant, so any future reference in this book to 'a limited company' or 'a company' will be concerned with limited liability companies.

### 3.5 Separate legal entity

The outstanding feature of a **limited company** is that, no matter how many individuals have bought shares in it, it is treated in its dealings with the outside world as if it were a person in its own right: it is said to be a separate 'legal entity'. A prime example of its identity as a separate legal entity is that it may sue other business entities, people – even its own shareholders – or, in turn, be sued by them.

Just as the law can create this separate legal person, it can also eliminate it, but only by using the proper legal procedures. The identity of the shareholders in a large company may change daily as shares are bought and sold by different people but this, itself, has no immediate impact upon the existence or nature of the company.

On the other hand, a small private company may have the same shareholders from the day it is incorporated (when it legally came into being), until the date when liquidation is completed (the cessation of the company, often known also as 'winding up' or being 'wound up').

#### Activity 3.1

Why would it be advantageous for a company to be able to sue other business entities, rather than for the directors or an employee to do so?

The legal formalities by which the company comes into existence can be found in any textbook on company law. It is not the purpose of this book to discuss company law in any great detail; this is far better left to a later stage of your studies. As companies must, however, comply with the law, the essential company law concerning accounting matters will be dealt with in this book as far as is necessary.

What is important is that the basic principles connected with company accounts can be seen in operation. So that you are not unduly confused, points which rarely occur, or on which the legal arguments are extremely involved and may not yet have been finally settled, will be left out completely or merely mentioned in passing. This means that some generalisations made in this book will need to be expanded upon when your accounting studies reach a more advanced stage.

### 3.6 Memorandum and Articles of Association

Each company is governed by two documents, known as the **Memorandum of Association** and the **Articles of Association**, generally referred to as the *memorandum* and the *articles*. The memorandum consists of five clauses for private companies, and six for public companies containing the following details:

- 1 The name of the company.
- 2 The part of the UK where the registered office will be situated.
- 3 The objects of the company.
- 4 A statement (if a limited liability company) that the liability of its members is limited.
- 5 Details of the share capital which the company is authorised to issue.
- 6 A public limited company will also have a clause stating that the company is a public limited company.

**The memorandum is said to be the document which discloses the conditions which govern the company's relationship with the outside world.**

### 3.7 Limited liability

The principle of limited liability underlying clause 4 has been of the utmost importance in industry and commerce. Without it, it is inconceivable that large business units, such as GlaxoSmithKline plc or Marks and Spencer plc, could have existed. The investor in a limited company, i.e. someone who owns shares in the company, is a shareholder. The most he or she can lose is the money paid for the shares although, where they are only partly paid, the shareholder is also liable for the unpaid part. With public companies, whose shares are traded on a stock exchange, shares can be sold easily whenever a shareholder wishes. Selling shares in a private company is normally far more difficult.

#### Activity 3.2

Why is it unlikely that many large companies could have existed if limited liability did not exist?

### 3.8 Classes of shares

The main types or classes of shares are **ordinary shares** and **preference shares**. Unless clearly stated in the Memorandum or Articles, preference shares are assumed to be of the cumulative variety already described in *Business Accounting 1*.

There are also a variety of other shares. The rights attaching to these shares are purely dependent on the skill and ingenuity of the person who prepares the Memorandum and Articles. An entirely new type of share may be created provided it does not contravene the law.

The shares which carry the right to the whole of the profits remaining after dividends have been paid on any preference shares (and any other fixed dividend shares) are often known as the equity share capital or as **equities**.

Until 1981, the only type of share which could be bought from the shareholders by the company itself were redeemable preference shares. This has changed completely, and is considered in detail in Chapter 5.

### 3.9 Distributable profits

The calculation of dividends from profits available for distribution was described in *Business Accounting 1*. Clearly, in order to do this, there needs to be some way of knowing what the amount of **distributable profits** is.

In the Companies Acts, there is a definition of **realised profits** and **realised losses**. A company's realised profits and losses are defined as 'those profits and losses which are treated as realised in the financial statements, in accordance with principles generally accepted with respect to the determination of realised profits and losses for accounting purposes at the time when those accounts are prepared'. In accounting, the realisation concept recognises profit or loss at the point when a contract is made in the market to buy or sell assets. The definition of realised profits and realised losses also applies for the purpose of calculating a company's distributable profits.

### 3.10 Table A

Besides the Memorandum of Association, every company must also have Articles of Association. Just as the memorandum governs the company's dealings with the outside world, the articles govern the relationships which exist between the members and the company, between one member and the other members, and other necessary regulations. The Companies Act has a model set of articles known as Table A. A company may, if it so wishes, have articles that are exactly the same as those in Table A, commonly known as 'adopting Table A'. Alternatively, it can adopt part of Table A and alter some of the sections. The adoption of the major part of Table A is normal for most private companies. In accounting textbooks, unless stated to the contrary, the accounting examples shown are usually based on the assumption that Table A has been adopted.

Table A lays down regulations concerning the powers of the directors of a company. These may be adopted or a company may draft its own regulations for the powers of its directors. Any such regulations are of the utmost importance when it is realised that the legal owners of the business, the shareholders, have entrusted the running of the company to the directors.

The shareholders' rights are largely limited to attending meetings, such as the annual general meeting, where they have the right to vote. However, some shares do not carry voting rights and the holders of these shares may attend but not vote at such meetings.

The Companies Acts make the keeping of proper sets of accounting records and the preparation of Final Accounts (financial statements) compulsory for every company. In addition, the financial statements for large companies must be audited, this being quite different from the situation in a partnership or a sole trader's business where an audit is not compulsory.

Companies with limited liability, whether they are private or public companies, have to send a copy of their Final Accounts (i.e. their financial statements), drawn up in a prescribed manner, to the Registrar of Companies. Public companies must submit them within seven months of their financial year end; private companies within ten months of their year end.

**Look at Chapters 11–13 for the accounting requirements of the Companies Acts.**

### 3.11 Public companies and the Stock Exchange

Dealings in the shares of most public companies are conducted on one or other of the recognised stock exchanges. The shares of private companies cannot be bought or sold on any stock exchange, as this would contravene the requirements for the company being recognised as a 'private' company.

The only entry made in the company's books when a shareholder sells all, or some, of his shares to someone else, is to record the change of identity of the shareholders. The price at which the shares were sold on the stock exchange is not entered into the company's books.

**Although no accounting entries are made, the price of the shares on the Stock Exchange does have repercussions upon the financial policy of the company.**

#### Activity 3.3

Why?

It must be recognised that stock exchanges are the 'second-hand markets' for a company's shares. The company does not actually sell (normally called **issue**) its shares in a stock exchange. The company issues new shares directly to the people who make application to it for the shares at the time when the company has shares available for issue. Shares of a public company sold and bought on stock exchanges are passing from one shareholder to another person who will then become a shareholder. So far as the company is concerned, the number of shares in issue is unchanged.

### 3.12 Stocks and shares

Later in this book you will learn about the procedure whereby the shares of a company may be made into **stock**. Thus 500 ordinary shares of £1 each may be made into £500 stock. The dividends paid on the shares or the stock would be the same, and the voting powers would also be the same. Apart from administrative convenience there is really no difference between shares and stock.

#### Learning outcomes

You should now have learnt:

- 1 Limited companies are governed by the Companies Acts.
- 2 Limited companies are each a separate legal entity.
- 3 Each company is governed by two documents:
  - (a) the Memorandum of Association, and
  - (b) the Articles of Association.
- 4 What is meant by 'limited liability'.
- 5 Investors in limited companies can only lose the amount they paid (plus any amount still unpaid if the shares are only part-paid) when they acquired their investment in the company, i.e. they have 'limited liability'.

## Answers to activities

- 3.1** If a director sued another business entity on behalf of a company, the director would be liable for any legal costs incurred were the case unsuccessful. Perhaps more meaningfully, if companies could not be sued, directors and employees could be exposed to the risk of being sued for actions taken by the company, even when they were not personally involved in what had occurred. In effect, granting companies a legal identity separate from their owners makes it possible to operate limited liability effectively.
- 3.2** Without limited liability, investors would be very unwilling to buy shares in companies. They would fear that they may lose everything they owned if the company failed. Companies would, therefore, find it very difficult to raise funds other than from banks and other financial institutions. Such funds would carry interest costs that would have to be paid irrespective of how well the companies were doing. In the early years of a new business, it can take quite a long time to become profitable and the reliance upon loan funding would increase the possibility that the company will fail. As a result, in an economic environment where there was no limited liability, the investors in the failed company could lose everything they own. It is unlikely that many would be willing to take this risk. Hence, it is unlikely that many large companies would exist were it not for limited liability.
- 3.3** If some new shares are to be issued, the price they are to be issued at will be largely dependent on the stock exchange valuation. If another firm is to be taken over by the company, part of the purchase price being paid using some of the company's shares, then the stock exchange value will also affect the value placed upon the shares being given. A takeover bid from another firm may well be caused because the stock exchange value of the shares has made a takeover seem worthwhile.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# The issue of shares and debentures

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the terminology relating to the issue of shares and debentures
- describe the steps in the process of issuing of shares and debentures
- record the accounting entries relating to the issue of shares and debentures
- make the necessary entries in the ledger accounts when shares are forfeited

## Introduction

In this chapter, you'll learn about the alternatives available to companies when they wish to issue shares and of the various entries to be made in the ledger accounts. You'll learn about how to record the issue of shares at a price greater than their nominal value and how to record the issue of shares to existing shareholders, rather than to non-shareholders wishing to purchase them. You will also learn about the difference in accounting entries made when debentures (a form of loan capital) rather than shares, are issued.

### 4.1 The issue of shares

The cost of issuing shares can be very high. As a result, the number of shares issued must be sufficient to ensure the cost of doing so is relatively insignificant compared to the amounts received.

When shares are issued, they may be payable, either (a) immediately on application, or (b) by instalments. Issues of shares may take place on the following terms connected with the price of the shares:

- 1 Shares issued at par. This would mean that a share of £1 nominal value would be issued for £1 each.
- 2 Shares issued at a premium. In this case a share of £1 nominal value would be issued for more than £1 each, say for £3 each.

**Note:** At one time, shares could be issued at a discount. Thus, shares each of £5 nominal value might have been issued for £3 each. However, this was expressly forbidden in the Companies Act 1980.

#### Activity 4.1

Why do you think companies may wish to issue shares at a discount and how do you think companies avoid being in this position?

## 4.2 Share premiums and discounts

This will all seem rather strange at first. How can a share with a nominal value of 10p, which states that value on the face of it, be issued for £3, and who would be foolish enough to buy it? The reasons for this apparently strange state of affairs stem from the Companies Act requirement that the share capital accounts always show shares at their nominal value, irrespective of how much the shares are worth or how much they were issued for. To illustrate this, the progress of two companies, A Ltd and B Ltd, can be looked at. Both started in business on 1 January 20X1 and issued 1 million ordinary shares each of 10p nominal value at par. Ignoring any issue expenses, each of the balance sheets on that date would be identical:

### Balance Sheet as at 1 January 20X1

	£
Bank	<u>100,000</u>
Capital	<u>100,000</u>

Five years later, on 31 December 20X5, the balance sheets show that the companies have fared quite differently. It is to be assumed here, for purposes of illustration, that the balance sheet values and any other interpretation of values happen to be identical.

A Ltd needs £100,000 more capital, and this is to be met by issuing more ordinary shares. Suppose that another 1 million ordinary shares of 10p nominal value each are issued at par. Column (a) below shows the balance sheet before the issue, and column (b) shows the balance sheet after the issue has taken place.

### Exhibit 4.1

#### A Ltd Balance Sheets (Solution 1) as at 31 December 20X5

	(a) £	(b) £
Fixed and current assets (other than bank)	225,000	225,000
Bank	<u>25,000</u>	<u>125,000</u>
	<u>250,000</u>	<u>350,000</u>
<i>Financed by:</i>		
Ordinary share capital	100,000	200,000
Profit and loss	<u>150,000</u>	<u>150,000</u>
	<u>250,000</u>	<u>350,000</u>

### Share premiums

Now the effect of what has happened can be appreciated. Before the new issue there were 1 million shares. As there were £250,000 of assets and no liabilities, each share was worth 25p. After the issue, there are 2 million shares and £350,000 of assets, so each share is now worth 17.5p. This would be extremely disconcerting to the original shareholders who have seen the value of each of their shares fall by 30 per cent (7.5p).

On the other hand, the new shareholder who has just bought shares for 10p each saw them rise in value immediately by 75 per cent to be worth 17.5p each. Only in one specific case would this be fair, and that is where each original shareholder buys an equivalent number of new shares.

What is required is a price which is equitable as far as the interests of the old shareholders are concerned, and yet will attract sufficient applications to provide the capital required. As in this case the balance sheet value and the real value are the same, the answer is that each old share was worth 25p and therefore each new share should be issued at a price of 25p. If this were done, the balance sheets would become as shown in Exhibit 4.2:

### Exhibit 4.2

#### A Ltd Balance Sheets (Solution 2) as at 31 December 20X5

	(a) £	(b) £
Fixed and current assets (other than bank)	225,000	225,000
Bank	<u>25,000</u>	<u>275,000</u>
	<u>250,000</u>	<u>500,000</u>
<i>Financed by:</i>		
Ordinary share capital (at nominal value)	100,000	200,000
Share premium (see note below)		150,000
Profit and loss	<u>150,000</u>	<u>150,000</u>
	<u>250,000</u>	<u>500,000</u>

Thus in (a) above, 1 million shares own between them £250,000 of assets = 25p each, while, in (b) 2 million shares are shown as owning £500,000 of assets = 25p each. Both the old and new shareholders are therefore satisfied with the bargain that has been made.

**Note:** The share premium shown on the capital side of the balance sheet is needed because the balance sheet would not balance without it. If shares are stated at nominal value but issued at another price, the actual amount received increases the bank balance, but the share capital is increased by a different figure. The share premium therefore represents the excess of the cash received over the nominal value of the shares issued.

#### Share discount

The other company, B Ltd, has not fared so well. It has, in fact, lost money. The accumulated losses are reflected in a debit balance on the profit and loss account as shown below in column (c). There are £80,000 of assets to represent the shareholders' stake in the firm of 1 million shares, i.e. each share is worth 8p. If more capital was needed, 1 million more shares could be issued. From the action taken in the previous case it will now be obvious that each new share of 10p nominal value would be issued for its real value of 8p each, were it permitted. The balance sheets would appear:

### Exhibit 4.3

#### B Ltd Balance Sheets (correct solution) as at 31 December 20X5

	(c)	(d)
Fixed and current assets (other than bank)	55,000	55,000
Bank	<u>25,000</u>	<u>105,000</u>
	<u>80,000</u>	<u>160,000</u>
Ordinary share capital	100,000	200,000
Discounts on shares (see below)		(20,000)
Profit and loss – debit balance	<u>(20,000)</u>	<u>(20,000)</u>
	<u>80,000</u>	<u>160,000</u>



Once again, as the share capital is shown at nominal value but the shares are issued at a different figure, the discount on the shares issued must be shown in order that the balance sheet balances.

It is, of course, a balancing figure needed because the entries already made for an increase in the ordinary share capital and the increase in the bank balance have been at different figures. The figure for discounts on shares therefore rectifies the double entry 'imbalance'.

Although shares cannot now be issued at a discount, some companies still exist which issued shares at a discount before 1980. In these cases, although not listed as an item in the balance sheet formats per the Companies Act 1985, a separate heading will have to be inserted in the balance sheet for the discount.

A balance sheet is a historical view of the past based on records made according to the firm's interpretation and use of accounting concepts and conventions. When shares are being issued it is not the view of the past that is important, but the view of the future. Therefore the actual premiums and discounts on shares being issued are a matter not merely of balance sheet values, but of the issuing company's view of the future and its estimate of how the investing public will react to the price at which the shares are being offered.

It is to be noted that there are **no restrictions on issuing shares at par or at a premium**. Let's now look at the double entries that need to be made when shares are issued. First we'll consider the case where the full amount is due in one payment made at the time of issue.

### 4.3 Shares payable in full on application

The issue of shares in illustrations (1) and (2) which follow are based on the balance sheets that have just been considered. First, let's look at the entries when shares are issued at their par value.

#### 1 Shares issued at par

One million ordinary shares with a nominal value of 10p each are to be issued. Applications, together with the necessary money, are received for exactly 1 million shares. The shares are then allotted to the applicants.

		Bank	
	£		
Ordinary share applicants	(A) 100,000		
Ordinary Share Applicants			
	£		£
Ordinary share capital	(B) <u>100,000</u>	Bank	(A) <u>100,000</u>
Ordinary Share Capital			
			£
		Ordinary share applicants	(B) 100,000

It may appear that the ordinary share applicants account is unnecessary, and that the only entries needed are a debit in the bank account and a credit in the ordinary share capital account. However, applicants do not always become shareholders; this is shown later. The applicant must make an offer for the shares being issued, accompanied by the necessary money: this is the application. After the applications have been vetted, the allotments of shares are made by the company. This represents the acceptance of the offer by the company and it is at this point that the applicant becomes a shareholder. Therefore (A) represents the offer by the applicant while (B) is the acceptance by the company. **No entry must be made in the share capital account until (B)**

**happens, for it is not until that point that the share capital is in existence.** The share applicants account is an intermediary account pending allotments being made.

Now let's look at the entries to be made when the shares are issued at more than their par value.

## 2 Shares issued at a premium

One million ordinary shares with a nominal value of 10p each are to be issued for 25p each (*see Exhibit 4.2 A Ltd previously*). Thus a premium of 15p per share has been charged. Applications and the money are received for exactly 1 million shares.

Bank			
		£	
Balance b/d		25,000	
Ordinary share applicants		250,000	
Ordinary Share Applicants			
		£	
Ordinary share capital	(A)	100,000	
Share premium	(B)	150,000	
		<u>250,000</u>	
			£
			250,000
			<u>250,000</u>
Share Premium			
			£
			Ordinary share applicants (B) 150,000
Ordinary Share Capital (A Ltd)			
			£
			Balance b/d 100,000
			Ordinary share applicants (A) 100,000

**Note:** (A) is shown as £100,000 because the share capital is shown at nominal value, not total issued value. The £150,000 share premiums (B) must therefore be credited to a share premium account to preserve double entry balancing.

Now let's look at the entries to be made when the number of shares applied for is not equal to the number of shares on offer.

## 3 Oversubscription and undersubscription for shares

When a company invites investors to apply for its shares it is obviously rare indeed if applications for shares equal exactly the number of shares to be issued. Where more shares are applied for than are available for issue, then the issue is said to be **oversubscribed**. Where fewer shares are applied for than are available for issue, then the issue has been **undersubscribed**.

With a new company, an amount is set in advance as being the minimum necessary to carry on any further with the running of the company. If the applications are less than the minimum stated, then the application monies are returned to the senders. This does not apply to an established company.

If 1 million shares of 10p each are available for issue, but only 875,000 shares are applied for, then only 875,000 shares will be issued. The accounting entries will be in respect of 875,000 shares, no entries being needed for the 125,000 shares not applied for, as they do not represent a transaction.

The opposite occurs when shares are oversubscribed. In this case, rationing is applied so that the issue is restricted to the shares available for issue. The process of selecting which applicants will get how many shares depends on the policy of the company. Some, for example, prefer to have large shareholders because this leads to lower administrative costs.

You can see why by considering the cost of calling a meeting of two companies each with 200,000 shares. H Ltd has 20 shareholders with an average holding of 10,000 shares. J Ltd has 1,000 shareholders with an average holding of 200 shares. They all have to be notified by post and given various documents including a set of the financial statements. The cost of printing and sending these is less for H Ltd with 20 shareholders than for J Ltd with 1,000 shareholders. This is only one example of the costs involved, but it will also apply with equal force to many items connected with the shares. Conversely, the directors may prefer to have more shareholders with smaller holdings, one reason being that it decreases the amount of voting power in any one individual's hands.

The actual process of rationing the shares is straightforward once a policy is in place. It may consist of scaling down applications, of drawing lots or some other chance selection, but it will eventually bring the number of shares to be issued down to the number of shares available. Excess application monies received will then be refunded by the company.

An issue of shares where 1 million ordinary shares of 10p nominal value each are to be issued at par payable in full but 1.55 million shares are applied for, will be recorded as follows:

Bank			
	£		£
Ordinary share applicants	155,000	Ordinary share applicants (refunds)	55,000
Ordinary Share Applicants			
	£		£
Bank	55,000	Bank	155,000
Ordinary share capital	100,000		
	<u>155,000</u>		<u>155,000</u>
Ordinary Share Capital			
			£
		Ordinary share applicants	100,000

Let's now look at the entries to be made when payment for shares purchased is to be made in instalments.

#### 4.4

### Issue of shares payable by instalments

The shares considered so far have all been issued as paid in full on application. Conversely, many issues are made which require payment by instalments. These are probably more common with public companies than with private companies. It should be noted that a public company is now not allowed to allot a share (i.e. pass ownership to the subscriber) unless a sum equal to at least one-quarter of its nominal value plus the whole of any premium has been paid on it. When the premium is large compared to the nominal value, this clearly affects the manner in which the instalments are divided.

The various stages, after the initial invitation has been made to the public to buy shares by means of advertisements (if it is a public company) etc. are as follows:

- (A) Applications are received together with the application monies.
- (B) The applications are vetted and the shares allotted, letters of allotment being sent out.

- (C) The excess application monies from wholly unsuccessful applicants, or, where the application monies received exceed both the application and allotment monies required, from wholly and partly unsuccessful applicants, are returned to them. Usually, if a person has been partly unsuccessful, his excess application monies are held by the company and will reduce the amount needed to be paid by him on allotment.
- (D) Allotment monies are received.
- (E) The next instalment, known as the first call, is requested.
- (F) The monies are received from the first call.
- (G) The next instalment, known as the second call, is requested.
- (H) The monies are received from the second call.

This carries on until the full number of calls have been made, although there is not usually a large number of calls to be made in an issue.

The reasons for the payments by instalments become obvious if it is realised that a company will not necessarily require the immediate use of all the money to be raised by the issue. Suppose a new company is to be formed: it is to buy land, erect a factory, equip it with machinery and then go into production. This might take two years altogether. Suppose the total sum needed was £1 million, required as follows:

Ordinary Share Capital	
	£
Cost of land, payable within 1 month	300,000
Cost of buildings, payable in 1 year's time	200,000
Cost of machinery, payable in 18 months' time	200,000
Working capital required in 2 years' time	300,000
	<u>1,000,000</u>

A decision may be made to match the timing of the payment of the instalments of the share issue to the timing of the requirement for funding. If so, the share issue may be on the following terms:

	Per cent
Application money per share, payable immediately	10
Allotment money per share, payable within 1 month	20
First call, money payable in 12 months' time	20
Second call, money payable in 18 months' time	20
Third call, money payable in 24 months' time	30
	<u>100</u>

The entries made in the share capital account should equal the amount of money requested to that point in time. However, instead of one share applicants account, there are usually several accounts each representing one of the instalments. For this purpose application and allotment are usually joined together in one account, the *application and allotment account*. This cuts out the need for transfers where excess *application monies* are held over and set off against allotment monies needed. That is, instead of refunding excess application monies, they are retained and used to meet subsequent instalments.

When allotment is made, and not until then, an entry of £300,000 (10 per cent + 20 per cent) would be made in the share capital account. On the first call, an entry of £200,000 would be made in the share capital account; likewise £200,000 on the second call and £300,000 on the third call. The share capital account will therefore contain not the monies received, but the amount of money requested. Exhibit 4.4 now shows an example of a share issue with payments by instalments.

**Exhibit 4.4**

A company is issuing 100,000 7 per cent preference shares of £1 each, payable 10 per cent on application, 20 per cent on allotment, 40 per cent on the first call and 30 per cent on the second call. Applications are received for 155,000 shares. A refund of the money is made in respect of 5,000 shares while, for the remaining 150,000 applied for, an allotment is to be made on the basis of 2 shares for every 3 applied for (assume that this will not involve any fractions of shares). The excess application monies are set off against the allotment monies asked for. The remaining requested instalments are all paid in full. The letters by the side of each entry refer to the various stages outlined earlier.

Bank			
	£		£
Application and allotment:		Application and allotment refund (C)	500
Application monies (A)	15,500		
Allotment monies			
(£100,000 × 20% less excess			
application monies £5,000) (D)	15,000		
First call (F)	40,000		
Second call (H)	30,000		
Application and Allotment			
	£		£
Bank – refund of application monies (C)	500	Bank (A)	15,500
Preference share capital (B)	30,000	Bank (D)	15,000
	<u>30,500</u>		<u>30,500</u>
First Call			
	£		£
Preference share capital (E)	<u>40,000</u>	Bank (F)	<u>40,000</u>
Second Call			
	£		£
Preference share capital (G)	<u>30,000</u>	Bank (H)	<u>30,000</u>
7 per cent Preference Share Capital			
	£		£
Balance c/d	100,000	Application and allotment (B)	30,000
		First call (E)	40,000
		Second call (G)	30,000
	<u>100,000</u>		<u>100,000</u>
		Balance b/d	100,000

If more than one type of share is being issued at the same time, e.g. preference shares and ordinary shares, then separate share capital accounts and separate application and allotment accounts and call accounts should be opened.

Now let's look at the entries to be made when a purchaser of the shares fails to pay the instalments due.

## 4.5 Forfeited shares

Sometimes, some shareholders fail to pay the calls requested. If drawn up with care, the Articles of Association of the company will provide that the defaulting shareholder forfeits the shares allocated. In this case, the shares will be cancelled. The instalments already paid by the shareholder will be forfeited and retained by the company.

After the forfeiture, the company may or may not choose to reissue the shares (though, in some cases, there may be a provision in the Articles of Association which prevents their reissue). There are regulations governing the prices at which such shares can be reissued. The amount received on reissue plus the amount received from the original shareholder should at least equal (a) the called-up value where the shares are not fully called up, or (b) the nominal value where the full amount has been called up. Any premium previously paid is disregarded in determining the minimum reissue price.

### Exhibit 4.5

Take the same information as that contained in Exhibit 4.4, but, instead of all the calls all being paid in full, Allen, the holder of 10,000 shares, fails to pay the first and second calls. He had already paid the application and allotment monies on the required dates. The directors conform to the provisions of the Articles of Association and (A) Allen is forced to suffer the forfeiture of his shares; (B) The amount still outstanding from Allen will be written off; (C) The directors then reissue the shares at 75 per cent of nominal value to J. Dougan; (D) Dougan pays for the shares.

First Call			
	£		£
Preference share capital	40,000	Bank	36,000
		Forfeited shares (B)	4,000
	<u>40,000</u>		<u>40,000</u>
Second Call			
	£		£
Preference share capital	30,000	Bank	27,000
		Forfeited shares (B)	3,000
	<u>30,000</u>		<u>30,000</u>
7 per cent Preference Share Capital			
	£		£
Forfeited shares (A)	10,000	Application and allotment	30,000
Balance c/d	90,000	First call	40,000
		Second call	30,000
	<u>100,000</u>		<u>100,000</u>
Balance c/d	100,000	Balance b/d	90,000
	<u>100,000</u>	J. Dougan (C)	10,000
			<u>100,000</u>
		Balance b/d	100,000





Forfeited Shares			
	£		£
First call (B)	4,000	Preference share capital (A)	10,000
Second call (B)	3,000		
Balance c/d	<u>3,000</u>		
	<u>10,000</u>		<u>10,000</u>
J. Dougan*	2,500	Balance b/d	3,000
Balance c/d	<u>500</u>		
	<u>3,000</u>		<u>3,000</u>
		Balance b/d	500
Bank			
	£		
First call (£90,000 × 40%)	36,000		
Second call (£90,000 × 30%)	27,000		
J. Dougan (D)	7,500		
J. Dougan			
	£		£
Preference share capital	10,000	Bank (D)	7,500
		Forfeited shares (discount on reissue)*	<u>2,500</u>
	<u>10,000</u>		<u>10,000</u>

\*The transfer of £2,500 from the forfeited shares account to J. Dougan's account is needed because the reissue was entered in the preference share capital account and Dougan's account at nominal value, i.e. following standard practice by which a share capital account is concerned with nominal values. But Dougan was not required to pay the full nominal price. Therefore the transfer of £2,500 is needed to close his account.

#### Activity 4.2

Why do you think companies make new share issues?

[Note: these are not the same as the shares issued when a company is first formed.]

The balance of £500 on the forfeited shares account can be seen to be: cash received from original shareholder on application and allotment £3,000 + from Dougan £7,500 = £10,500. This is £500 over the nominal value so the £500 appears as an extra credit balance. This could be transferred to a profit on reissue of forfeited shares account, but it would be pointless for small amounts. More normally it would be transferred to the credit of a share premium account.

Having looked at what is done when payments are not made, let's consider the treatment of payments being received early or received late.

## 4.6

### Calls in advance and in arrear and the balance sheet

At the balance sheet date some shareholders will not have paid all the calls made. These are collectively known as **calls in arrear**. On the other hand, some shareholders may have

paid amounts in respect of calls not made by the balance sheet date. These are **calls in advance**.

Calls in arrear, i.e. **called-up share capital not paid**, is shown in the balance sheet in one of the positions shown in the format per the Companies Act 1985 (*see* Chapter 12). There is no specified place in the Companies Act format for calls in advance, so this is inserted in the balance sheet as an extra heading.

So far, we have looked at the issue of shares to anyone, whether or not they are existing shareholders. Now, let's look at what happens when a company wishes to offer shares for sale to existing shareholders.

## 4.7 Rights issues

The costs of making a new issue of shares can be quite high. One way to reduce the costs of raising new long-term capital in the form of issuing shares is to do so in the form of a **rights issue**. To do this, the company contacts the existing shareholders, and informs them of the number of shares which each one of them is entitled to buy of the new issue. In most cases, shareholders are allowed to renounce their rights to the new shares in favour of someone else to whom they sell the right to purchase the shares.

A right issue is usually pitched at a price which enables the rights to be sold. If any shareholders do not either buy the shares or transfer their rights, the directors have the power to dispose of the shares not taken up by issuing them in some other way. Alternatively, they may choose not to issue them.

So far in this chapter, we have looked at the issue of shares. Companies may also raise funds by issuing long-term loans. These are called **debentures**.

## 4.8 Debentures

A **debenture** is a bond acknowledging a loan to a company. It is usually issued under the company's seal (i.e. is an official document issued by the company, similar to a share certificate) and bears a fixed rate of interest (similar to preference shares). However, unlike shares, which normally depend on profits out of which to appropriate dividends, debenture interest is payable whether or not profits are made.

A debenture may be **redeemable**, i.e. repayable at or by a specified date. Conversely it may be irredeemable, redemption taking place only when the company is eventually liquidated, or in a case such as when the debenture interest is not paid within a given time limit.

People lending money to companies in the form of debentures will obviously be interested in how safe their investment will be. In the case of some debentures, the debenture holders are given the legal right that on certain happenings they will be able to take control of specific assets, or of the whole of the assets. They can then sell the assets and recoup the amount due under their debentures, or deal with the assets in ways specified in the deed under which the debentures were issued. Such debentures are known as being secured against the assets, the term **mortgage debenture** often being used. Other debentures carry no prior right to control the assets under any circumstances. These are known as **simple** or **naked debentures**.

### Activity 4.3

Why do you think companies issue debentures rather than making a new share issue?



## 4.9 The issue of debentures

The entries for the issue of debentures are similar to those for shares but, nowadays, they are normally issued at their nominal value. If the word ‘debentures’ is substituted for ‘share capital’ in the T-accounts you saw earlier in this chapter, the entries in the ledger accounts would be identical.

## 4.10 Shares of no par value

You should now realise that a fixed par value for a share can be very confusing. For anyone who has not studied accounting, it may well come as a shock to find that a share with a par value of £1 might have been issued for £5. If the share is dealt in on the Stock Exchange, they might find a £1 share selling at £10 or even £20 or, equally well, it may sell for only 10p.

Another problem with the use of a par value is that it can give people entirely the wrong impression of the amount of dividend paid. If a low par value is used, the dividend (which is declared as a percentage of the par value) can look excessive when it really isn't.

### Exhibit 4.6

Jones bought a share 40 years ago for £1. At the time, he was satisfied with a return of 5 per cent on his money. With a 5 per cent dividend he could buy a certain amount of goods which will be called *x*. Now, 40 years later, to buy that same amount of goods, he would need, say, 20 times as much money. Where previously £5 would have bought *x*, now he would need £100. To keep the dividend at the same level of purchasing power, he would need a dividend now of 100 per cent, as compared with the 5 per cent dividend of 40 years ago.

In many countries, including the USA and Canada, no par value is attached to shares being issued. A share is issued at whatever price is suitable at the time, and the money received is credited to a share capital account.

### Activity 4.4

Why do you think companies are not allowed to issue shares at no par value in the UK?

## Learning outcomes

You should now have learnt:

- 1 Shares may be issued either:
  - (a) at par, or nominal value – i.e. a £1 ordinary share would be issued in exchange for payment of £1, or
  - (b) at a premium, i.e. if a £1 ordinary share were issued at a premium of 25p, it would cost the buyer £1.25 (and the 25p would be put into the issuing company's *share premium* account).
- 2 How to make the accounting entries when shares are issued.
- 3 How to make the accounting entries when shares are forfeited.
- 4 How to make the accounting entries when debentures are issued.
- 5 The accounting entries made on the issue of debentures are identical to the accounting entries made on the issue of shares though, obviously, debenture ledger accounts are used rather than share capital ledger accounts.

## Answers to activities

- 4.1** If a company is not performing very well and its share price has fallen below its nominal value, it would find it very difficult to issue shares at par or above. Hence, it may wish to issue shares at a discount. As companies are prohibited from doing so, it is common nowadays for shares to be given very low nominal values and then issued, in the first instance, at a price considerably in excess of their nominal value. This makes the likelihood of companies ever being in a position where they would wish to issue shares at a discount extremely rare. In effect, by adopting very low nominal values, companies make the restriction on their being able to issue shares at a discount irrelevant.
- 4.2** Companies normally make new share issues in order to obtain funds or in order to use the new shares to purchase another business entity.
- 4.3** Issuing shares may not be appropriate because the current share price is low and it is felt that issuing new shares at this time will enable investors to buy into the company too cheaply. That is, when the share price rises, the new investors will make substantial profits on their investment. A company may prefer to wait until the share price is higher before selling new shares. It may also be the case that the share price is low because investors do not feel that the company is a good buy at present. Selling new shares may be difficult. Debentures do not involve transference of rights of ownership. Buyers of debentures receive interest, rather than a share of profit. If the company feels its profits are going to grow, it may prefer to issue debentures so that existing shareholders receive the maximum long-term benefit of their investment in the company. That is, their share of future profits is not diluted by the issue of new shares.
- 4.4** When shares are issued at a premium, the excess above the nominal value is put into a reserve (the share premium account). Such a reserve can, in certain circumstances, be distributed or utilised. Doing so has no effect upon the share capital account. If shares are issued with no nominal value, share capital in the balance sheet would represent the total amount received by a company when it issued shares. The share premium account would no longer be readily identifiable. In fact, it would not and could not exist (as no notion of par value would exist). By requiring shares to have a nominal value, additional flexibility is granted to the company in how it uses the funds received when it issues shares.

## Review questions

- 4.1** Pilot Ltd company has a nominal share capital of £200,000 comprising 200,000 ordinary shares of £1 each. The whole of the capital was issued at par on the following terms:

	<i>Per share</i>
Payable on application	15p
Payable on allotment	20p
First call	30p
Second call	35p

Applications were received for 250,000 shares and it was decided to allot the shares on the basis of four for every five for which applications had been made. The balance of application monies was applied to the allotment, no cash being refunded. The balance of allotment monies was paid by the members.

The calls were made and paid in full by the members, with the exception of one who failed to pay the first and second calls on the 1,000 shares allotted to him. A resolution was passed by the directors to forfeit the shares. The forfeited shares were later issued to F Bell at £80p each.

Show the ledger accounts recording all the above transactions, and the relevant extracts from a balance sheet after all the transactions had been completed.

- 4.2** Feliz Ltd has an authorised capital of £500,000 comprising 1 million ordinary shares of 50p each. The 1 million shares were issued at par, payments being made as follows:

	<i>Per share</i>
Payable on application	10p
Payable on allotment	25p
First call	35p
Second call	30p



Applications were received for 1.28 million shares. It was decided to refund application monies on 80,000 shares and to allot the shares on the basis of five for every six applied for. The excess application monies sent by the successful applicants is not to be refunded but is to be held and so reduce the amount payable on allotment.

The calls were made and paid in full with the exception of three members holding a combined total of 6,000 shares who paid neither the first nor the second call and another member who did not pay the second call on 2,000 shares. The shares were forfeited and reissued to C Lamb at a price of 85p per share.

You are to draft the ledger accounts to record the transactions.

**4.3** The authorised and issued share capital of Cosy Fires Ltd was £75,000 divided into 75,000 ordinary shares of £1 each, fully paid. On 2 January 20X7, the authorised capital was increased by a further 85,000 ordinary shares of £1 each to £160,000. On the same date 40,000 ordinary shares of £1 each were offered to the public at £1.25 per share payable as to £0.60 on application (including the premium), £0.35 on allotment and £0.30 on 6 April 20X7.

The lists were closed on 10 January 20X7, and by that date applications for 65,000 shares had been received. Applications for 5,000 shares received no allotment and the cash paid in respect of such shares was returned. All shares were then allocated to the remaining applicants pro rata to their original applications, the balance of the monies received on applications being applied to the amounts due on allotment.

The balances due on allotment were received on 31 January 20X7, with the exception of one allottee of 500 shares and these were declared forfeited on 4 April 20X7. These shares were reissued as fully paid on 2 May 20X7, at £1.10 per share. The call due on 6 April 20X7 was duly paid by the other shareholders.

**You are required:**

- (a) To record the above-mentioned transactions in the appropriate ledger accounts; and
- (b) To show how the balances on such accounts should appear in the company's balance sheet as on 31 May 20X7.

*(Association of Chartered Certified Accountants)*

**4.4A** During the year to 30 September 20X7, Kammer plc made a new offer of shares. The details of the offer were as follows:

- 1 100,000 ordinary shares of £1 each were issued payable in instalments as follows:

	<i>Per share</i>
	£
On application at 1 November 20X6	0.65
On allotment (including the share premium of £0.50 per share) on 1 December 20X6	0.55
On first and final call on 1 June 20X7	0.30
	<u>£1.50</u>

- 2 Applications for 200,000 shares were received, and it was decided to deal with them as follows:
  - (a) to return cheques for 75,000 shares;
  - (b) to accept in full applications for 25,000 shares; and
  - (c) to allot the remaining shares on the basis of three shares for every four shares applied for.
- 3 On the first and final call, one applicant who had been allotted 5,000 shares failed to pay the due amount, and his shares were duly declared forfeited. They were then reissued to Amber Ltd on 1 September 20X7 at a price of £0.80 per share fully paid.

*Note:* Kammer's issued share capital on 1 October 20X6 consisted of 500,000 ordinary shares of £1 each.

**Required:**

Record the above transactions in the following ledger accounts:

- (a) ordinary share capital;
- (b) share premium;

- (c) application and allotment;
- (d) first and final call;
- (e) forfeited shares; and
- (f) Amber Ltd's account.

*(Association of Accounting Technicians)*

**4.5** M Limited has an authorised share capital of £1,500,000 divided into 1,500,000 ordinary shares of £1 each. The issued share capital at 31 March 20X7 was £500,000 which was fully paid, and had been issued at par. On 1 April 20X7, the directors, in accordance with the company's Articles, decided to increase the share capital of the company by offering a further 500,000 ordinary shares of £1 each at a price of £1.60 per share, payable as follows:

On application, including the premium	£0.85 per share
On allotment	£0.25 per share
On first and final call on 3 August 20X7	£0.50 per share

On 13 April 20X7, applications had been received for 750,000 shares and it was decided to allot the shares to applicants for 625,000 shares, on the basis of four shares for every five shares for which applications had been received. The balance of the money received on application was to be applied to the amounts due on allotment. The shares were allotted on 1 May 20X7, the unsuccessful applicants being repaid their cash on this date. The balance of the allotment money was received in full by 15 May 20X7.

With the exception of one member who failed to pay the call on the 5,000 shares allotted to him, the remainder of the call was paid in full within two weeks of the call being made.

The directors resolved to forfeit these shares on 1 September 20X7, after giving the required notice. The forfeited shares were reissued on 30 September 20X7 to another member at £0.90 per share.

**You are required to** write up the ledger accounts necessary to record these transactions in the books of M Limited.

*(Chartered Institute of Management Accountants)*

**4.6A** Applications were invited by the directors of Grobigg Ltd for 150,000 of its £1 ordinary shares at £1.15 per share payable as follows:

	<i>Per share</i>
On application on 1 April 20X8	£0.75
On allotment on 30 April 20X8 (including the premium of £0.15 per share)	£0.20
On first and final call on 31 May 20X8	£0.20

Applications were received for 180,000 shares and it was decided to deal with these as follows:

- 1 To refuse allotment to applicants for 8,000 shares.
- 2 To give full allotment to applicants for 22,000 shares.
- 3 To allot the remainder of the available shares pro rata among the other applicants.
- 4 To utilise the surplus received on applications in part payment of amounts due on allotment.

An applicant, to whom 400 shares had been allotted, failed to pay the amount due on the first and final call and his shares were declared forfeit on 31 July 20X8. These shares were reissued on 3 September 20X8 as fully paid at £0.90 per share.

Show how the transactions would be recorded in the company's books.

*(Association of Chartered Certified Accountants)*

**You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)**

# Companies purchasing and redeeming their own shares and debentures

## Learning objectives

After you have studied this chapter, you should be able to:

- explain, in the context of shares and debentures, the difference between the terms 'purchasing' and 'redeeming'
- describe the alternative ways in which a company may purchase or redeem its own shares and debentures
- explain the difference between the purchase/redemption opportunities available to private companies, and those available to other companies
- record the accounting entries relating to the purchase and the redemption of shares and debentures

## Introduction

In this chapter, you'll learn the difference between the terms 'redemption' and 'purchase' of a company's own shares and debentures and the rules relating to companies that do either of these things. You will learn how to record such activities in the ledger accounts and of the effects of such activities upon the balance sheet.

### 5.1 Purchasing and redeeming own shares

In the context of shares and debentures, to all intents and purposes, the words 'purchasing' and 'redeeming' may appear to be identical and interchangeable. They both involve an outflow of cash incurred by a company in getting back its own shares so that it may then cancel them. However, legally, 'redeeming' means the buying back of shares which were originally issued as 'redeemable shares'. That is, the company stated when they were issued that they would or could be bought back at sometime in the future by the company. The actual terms of the redemption are declared at the time when the shares are issued. In contrast, when shares issued are not stated to be redeemable, if they are subsequently bought back by the company, the company is said to be 'purchasing' its own shares rather than 'redeeming' them.

Until 1981, a company in the UK could not normally 'purchase' its own ordinary shares. 'Redemption' was limited to one type of share, **redeemable preference shares**. This had not been the case in the USA and much of Europe where, for many years, companies had, with certain restrictions, been allowed to buy back their own ordinary shares. The main reason why this was

not allowed in the UK prior to 1981 was the fear that the interests of creditors could be adversely affected if the company used its available cash to buy its own ordinary shares, thus leaving less to satisfy the claims of the creditors in the event that the company had to be wound up. The possibilities of abuse with preference shares was considered to be less than with ordinary shares, thus it was possible to have redeemable preference shares.

Since 1981, under the Companies Acts, if authorised by its Articles of Association, a company may:

- (a) issue redeemable shares of any class (preference, ordinary, etc.). Redeemable shares include those that are to be redeemed on a particular date as well as those that are merely liable to be redeemed at the discretion of the shareholder or of the company. There is an important proviso that a company can only issue redeemable shares if it has in issue shares that are *not* redeemable. Without this restriction a company could issue only redeemable shares, then later redeem all of its shares, and thus finish up without any shareholders;
- (b) ‘purchase’ its own shares (i.e. shares that were not issued as being redeemable shares). Again, the company must, *after* the purchase, have other shares in issue at least some of which are not redeemable. This again prevents a company redeeming its whole share capital and thus ceasing to have any shareholders.

### Activity 5.1

Why do you think the rules concerning purchase and redemption were changed in 1981?

## 5.2

### Advantages to companies of being able to purchase and redeem their own shares

There are many possible advantages to a company arising from its being able to buy back its own shares. For public companies, the main advantage is that those with surplus cash resources can return some of this surplus cash back to its shareholders by buying back some of their own shares, rather than being pressurised to use such cash in other, less economic ways.

However, the greatest advantages are for private companies and relate to overcoming problems which occur when shareholders cannot sell their shares on the ‘open market’. This means that:

- 1 They can help shareholders who have difficulties in selling their shares to realise their value when needed.
- 2 People will be more willing to buy shares from private companies. The fear of not being able to dispose of them previously led to finance being relatively difficult for private companies to obtain from people other than the original main proprietors of the company.
- 3 In many ‘family’ companies, cash is needed to pay for taxes on the death of a shareholder.
- 4 Shareholders with grievances against the company can be bought out, thus contributing to the more efficient management of the company.
- 5 Family-owned companies are helped in their desire to keep control of the company when a family shareholder with a large number of shares dies or retires.
- 6 As with public companies, private companies can return unwanted cash resources to their shareholders.
- 7 For both private companies, and for public companies whose shares are not listed on a stock exchange, it may help boost share schemes for employees, as the employees would know that they could dispose of the shares fairly easily.

## 5.3 Accounting entries

The accounting entries for the purchase and the redemption of shares are exactly the same, except that the word ‘redeemable’ will appear as the first word in the title of the ledger accounts for shares that are redeemable. The figures to be entered will naturally be affected by the **terms** under which shares are redeemed or purchased, but the **location** of the debits and credits to be made will be the same.

You will understand the rather complicated entries needed more easily if you understand the reasoning behind the issuing of Companies Acts. The protection of the creditor was uppermost in the minds of Parliament. The general idea is that **capital** should not be returned to the shareholders, except under certain circumstances. If capital is returned to the shareholders, thus reducing the cash and bank balances, then the creditors could lose out badly if there was not then sufficient cash/bank balances to pay their claims. Thus the shareholders, seeing that things were not progressing too well in the company, could get their money out leaving the creditors with nothing.

There are dividends which can quite legitimately be paid to the shareholders out of distributable profits but, in order to prevent shareholders withdrawing all their capital, included under the general heading of ‘capital’ are reserves which *cannot* be used for the payment of cash dividends.

There are exceptions to this, namely the reduction of capital by public companies (*see* Chapter 9) and the special powers of a private company to purchase or redeem its own shares out of capital (which you will learn about later in this chapter). However, apart from these special cases, company law regulations are intended to ensure that capital does not decrease when shares are redeemed or purchased. This is what lies behind the accounting entries which we will now consider.

## 5.4 Rules for redemption or purchase

In *all* cases, shares can only be redeemed or purchased when they are fully paid.

### Activity 5.2

Why do you think shares need to be fully paid before they can be redeemed or purchased?

The safeguards for the protection of capital contained in the Companies Acts are summarised in the next five sections.

## 5.5 Nominal value

In respect of the **nominal value** of shares redeemed or purchased, either (a) there must be a new issue of shares to provide the funds for redemption or purchase or (b) sufficient distributable profits must be available (i.e. a large enough credit balance on the appropriation account) which could be diverted from being used up as dividends to being treated as used up for the purpose of redeeming or purchasing the shares.

Therefore, when shares are redeemed or purchased other than by using the proceeds of a new share issue, the amount of distributable profits treated as being used up to redeem or purchase the *nominal* value of the shares redeemed or purchased is debited to the appropriation account and credited to a **capital redemption reserve**. (Previously, this was called a ‘capital redemption reserve fund’.)

Thus, the old share capital amount is equal to the total of the new share capital *plus* the capital redemption reserve. The capital redemption reserve is a 'non-distributable' reserve. It *cannot* be transferred back to the credit of the appropriation account, and so increase the profits available for distribution as cash dividends. The process of diverting profits from being usable for dividends means that the non-payment of the dividends leaves more cash in the company against which creditors could claim if necessary.

**Note:** In all the examples that follow, as the entries are the same, no attempt is made to indicate whether or not the shares being redeemed/purchased are redeemable shares. In a real company, the titles of the accounts would state which shares were redeemable.

In Exhibit 5.1, journal entries are shown first, followed by the changes in the balance sheet amounts.

**Note:** In all these examples, the amounts involved are kept small so that you can follow more easily the entries and changes that arise.

### Exhibit 5.1

£2,000 preference shares are redeemed/purchased at par. In order to do so, a new issue is to be made of £2,000 ordinary £1 shares at par. The journal entries are:

		Dr £	Cr £
(A1)	Bank	2,000	
(A2)	Ordinary share applicants		2,000
	Cash received from applicants		
(B1)	Ordinary share applicants	2,000	
(B2)	Ordinary share capital		2,000
	Ordinary shares allotted		
(C1)	Preference share capital	2,000	
(C2)	Preference share purchase*		2,000
	Shares to be redeemed/purchased		
(D1)	Preference share purchase*	2,000	
(D2)	Bank		2,000
	Payment made to redeem/purchase shares		

**\*To make it easier to follow, all these examples refer only to the redemption of preference shares. The process is identical whatever the type of shares being redeemed or purchased, only the names of the accounts to be used are different. When shares are redeemed, they are transferred to a 'share redemption account'. If they are purchased, a 'share purchase account' is used instead.**

	Balances before £		Dr £	Cr £	Balances after £
Net assets (except bank)	7,500				7,500
Bank	2,500	(A1)	2,000	(D2)	2,500
	<u>10,000</u>				<u>10,000</u>
Ordinary share capital	5,000			(B2)	7,000
Ordinary share applicants	–	(B1)	2,000	(A2)	–
Preference share capital	2,000	(C1)	2,000		–
Preference share purchase	–	(D1)	2,000	(C2)	–
	<u>7,000*</u>				<u>7,000</u>
Profit and loss	3,000				3,000
	<u>10,000</u>				<u>10,000</u>

**\*Total 'capitals' remain the same as the preference share capital has been replaced with additional ordinary capital.**



Exhibit 5.2 shows the journal entries and the changes to the balance sheet amounts when reserves are used to redeem or purchase shares.

### Exhibit 5.2

£2,000 preference shares are redeemed/purchased at par, with no new issue of shares to provide funds for the purpose. Therefore an amount equal to the nominal value of the shares redeemed *must* be transferred from the profit and loss appropriation account to the credit of a capital redemption reserve.

				<i>Dr</i> £	<i>Cr</i> £
(A1)	Preference share capital			2,000	
(A2)	Preference share purchase				2,000
	<u>Shares to be redeemed/purchased</u>				
(B1)	Preference share purchase			2,000	
(B2)	Bank				2,000
	<u>Cash paid as purchase/redemption</u>				
(C1)	Profit and loss appropriation			2,000	
(C2)	Capital redemption reserve				2,000
	<u>Transfer per Companies Act 1985, Section 45</u>				

	<i>Balances before</i> £		<i>Effect</i> <i>Dr</i> £	<i>Cr</i> £	<i>Balances after</i> £
Net assets (except bank)	7,500				7,500
Bank	<u>2,500</u>			(B2) 2,000	<u>500</u>
	<u>10,000</u>				<u>8,000</u>
Ordinary share capital	5,000				5,000
Preference share capital	2,000	(A1)	2,000		–
Preference share purchase	–	(B1)	2,000	(A2) 2,000	–
Capital redemption reserve	–			(C2) 2,000	<u>2,000</u>
	<u>7,000*</u>				<u>7,000</u>
Profit and loss	<u>3,000</u>	(C1)	2,000		<u>1,000</u>
	<u>10,000</u>				<u>8,000</u>

**\*The total 'capitals' (i.e. share capital + non-distributable reserves) remain the same at £7,000.**

Exhibit 5.3 shows the journal entries and the changes to the balance sheet amounts when both the Exhibit 5.1 and Exhibit 5.2 approaches are used.

**Exhibit 5.3**

£2,000 preference shares are redeemed/purchased at par, being £1,200 from issue of ordinary shares at par and partly by using the profit and loss appropriation account balance.

		Dr £	Cr £
(A1)	Bank	1,200	
(A2)	Ordinary share applicants		1,200
	Cash received from applicants		
(B1)	Ordinary share applicants	1,200	
(B2)	Ordinary share capital		1,200
	Ordinary shares allotted		
(C1)	Profit and loss appropriation	800	
(C2)	Capital redemption reserve		800
	Part of redemption/purchase not covered by new issue, to comply with Companies Act 1985		
(D1)	Preference share capital	2,000	
(D2)	Preference share purchase		2,000
	Shares being redeemed/purchased		
(E1)	Preference share purchase	2,000	
(E2)	Bank		2,000
	Payment made for redemption/purchase		

	Balances before £		Dr £		Cr £	Balances after £
Net assets (except bank)	7,500					7,500
Bank	2,500	(A1)	1,200	(E2)	2,000	1,700
	<u>10,000</u>					<u>9,200</u>
Ordinary share capital	5,000			(B2)	1,200	6,200
Ordinary share applicants	–	(B1)	1,200	(A2)	1,200	–
Preference share capital	2,000	(D1)	2,000			–
Preference share purchase	–	(E1)	2,000	(D2)	2,000	–
Capital redemption reserve	–			(C2)	800	800
	<u>7,000*</u>					<u>7,000*</u>
Profit and loss	3,000	(C1)	800			2,200
	<u>10,000</u>					<u>9,200</u>

\*Total 'capitals' remain the same.

## 5.6 Premiums

Another requirement of the Companies Acts is that when shares are being redeemed/purchased at a premium, but they were *not* originally issued at a premium, then an amount equal to the premium *must* be transferred from the profit and loss appropriation account to the credit of the share purchase/redemption account. As before, this is required so as to maintain total capitals by diverting profits from being distributable to being part of the non-distributable capital.

**Exhibit 5.4**

£2,000 preference shares which were originally issued at par are redeemed/purchased at a premium of 20 per cent. There is no new issue of shares for the purpose. The ordinary shares were issued at a premium, thus the reason for the share premium account being in existence. However, as it is *not* the ordinary shares which are being redeemed, the share premium *cannot* be used to source the premium paid on the redemption/purchase.

		Dr £	Cr £
(A1)	Preference share capital	2,000	
(A2)	Preference share purchase		2,000
	Shares being redeemed/purchased		
(B1)	Profit and loss appropriation	400	
(B2)	Preference share purchase		400
	Premium on purchase/redemption of shares <i>not</i> previously issued at premium		
(C1)	Profit and loss appropriation	2,000	
(C2)	Capital redemption reserve		2,000
	Transfer because shares redeemed/purchased out of distributable profits		
(D1)	Preference share purchase	2,400	
(D2)	Bank		2,400
	Payment on purchase/redemption		

	Balances before £		Dr £	Cr £	Balances after £
Net assets (except bank)	7,500				7,500
Bank	2,500			(D2) 2,400	100
	<u>10,000</u>				<u>7,600</u>
Ordinary share capital	4,500				4,500
Preference share capital	2,000	(A1)	2,000		–
Preference share purchase	–	(D1)	2,400	(A2) 2,000	–
				(B2) 400	–
Capital redemption reserve	–			(C2) 2,000	2,000
Share premium	500				500
	<u>7,000*</u>				<u>7,000*</u>
Profit and loss	3,000	(C1)	2,000		600
		(B1)	400		
	<u>10,000</u>				<u>7,600</u>

**\*Once again, the total 'capitals' remain the same.**

Under the Companies Acts, when shares are being redeemed or purchased at a premium, *and* they were originally issued at a premium, *and* a new issue of shares is being made for the purpose, then the share premium account *can* have an amount calculated as follows transferred to the credit of the share purchase/redemption account. This is shown as (E) below.

## Share Premium Account

		£
Balance before new issue	(A)	xxx
Add Premium on new issue	(B)	<u>xxx</u>
Balance after new issue	(C)	xxx
Amount that <i>may</i> be transferred is the lesser of:	(E)	
Premiums that were received when it first issued the shares now being redeemed/purchased (D)		xxx
or		
Balance after new issue (C) above		<u>xxx</u>
Transfer to share purchase/redemption	(E)	(xxx)
New balance for balance sheet (could be nil)		<u>xxx</u>

Where the amount being deducted (E) is *less* than the premium paid on the *current* redemption or purchase, then an amount equivalent to the difference must be transferred from the debit of the profit and loss appropriation account to the credit of the share purchase/redemption account. (An example of this is shown below in Exhibit 5.5.) This again diverts the appropriate amount of profits away from being distributable.

## Exhibit 5.5

£2,000 preference shares of three companies which were originally issued at a premium of 20 per cent are now purchased/redeemed at a premium of 25 per cent. The changes to the share premium account are shown below for the three companies.

- Company 1 issues 2,400 ordinary £1 shares at par.
- Company 2 issues 2,000 ordinary £1 shares at 20 per cent premium.
- Company 3 issues 1,600 ordinary £1 shares at 50 per cent premium.

## Share Premium Account

		Company 1	Company 2	Company 3
		£	£	£
Balance before new issue	(A)	150 <sup>Note (a)</sup>	400	400
Premium on new issue		—	<u>400</u>	<u>800</u> (B)
Balance after new issue	(C)	150	800	1,200
Amount transferable to share purchase/redemption is therefore lower of (C) or original premium on issue (£400)		(150) <sup>Note (b)</sup>	(400) <sup>Note (b)</sup>	(400) <sup>Note (b)</sup>
New balance for balance sheet		<u>—</u>	<u>400</u>	<u>800</u>

**Note (a):** In Company 1 it is assumed that, of the original £400 premium, the sum of £250 had been used to issue bonus shares (see Chapter 9).

**Note (b):** As these figures are less than the premium of £500 now being paid, the differences (Company 1 £350; Companies 2 and 3 £100 each) must be transferred from the debit of the profit and loss appropriation account to the credit of the preference share/purchase redemption account.



**Journal entries:**

	Company 1		Company 2		Company 3	
	Dr	Cr	Dr	Cr	Dr	Cr
	£	£	£	£	£	£
(A1) Bank	2,400		2,400		2,400	
(A2) Ordinary share applicants Cash received from applicants		2,400		2,400		2,400
(B1) Ordinary share applicants	2,400		2,400		2,400	
(B2) Ordinary share capital		2,400		2,000		1,600
(B3) Share premium		–		400		800
Ordinary shares allotted						
(C1) Preference share capital	2,000		2,000		2,000	
(C2) Preference share purchase Shares being redeemed/purchased		2,000		2,000		2,000
(D1) Share premium account	150		400		400	
(D2) Preference share purchase Amount of share premium account used for redemption/purchase		150		400		400
(E1) Profit and loss appropriation	350		100		100	
(E2) Preference share purchase Excess of premium payable over amount of share premium account usable for the purpose		350		100		100
(F1) Preference share purchase	2,500		2,500		2,500	
(F2) Bank Amount paid on redemption/purchase		2,500		2,500		2,500

**Exhibit 5.6**

The following balance sheets for the three companies in Exhibit 5.5 are given *before* the purchase/redemption. The balance sheets are then shown *after* purchase/redemption.

**Balance Sheets (*before* redemption/purchase)**

	Company 1	Company 2	Company 3
	£	£	£
Net assets (except bank)	7,500	7,500	7,500
Bank	2,500	2,500	2,500
	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>
Ordinary share capital	4,850	4,600	4,600
Preference share capital	2,000	2,000	2,000
Share premium	150	400	400
	<u>7,000</u>	<u>7,000</u>	<u>7,000</u>
Profit and loss account	3,000	3,000	3,000
	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>

Balance Sheets (*after redemption/purchase*)

	Company 1	Company 2	Company 3
	£	£	£
Net assets (except bank)	7,500	7,500	7,500
Bank	<u>2,400</u>	<u>2,400</u>	<u>2,400</u>
	<u>9,900</u>	<u>9,900</u>	<u>9,900</u>
Ordinary share capital	7,250	6,600	6,200
Share premium	<u>—</u>	<u>400</u>	<u>800</u>
	7,250	7,000	7,000
Profit and loss account	<u>2,650</u>	<u>2,900</u>	<u>2,900</u>
	<u>9,900</u>	<u>9,900</u>	<u>9,900</u>

## 5.7 Private companies: redemption or purchase of shares out of capital

The Companies Act 1981 introduced a new power for a *private* company to redeem/purchase its own shares where *either* it has insufficient distributable profits for the purpose *or* it cannot raise the amount required by a new issue. Previously it would have had to apply to the court for **capital reduction** (which you will learn about in Chapter 9). The 1981 legislation made it far easier to achieve the same objectives, in terms of both time and expense.

The full details of the various matters which must be dealt with by private companies who pursue this option are beyond the scope of this textbook. If you wish to go into this topic in greater detail, you will need to consult a book on company law. For our purposes, a very brief outline is as follows:

- 1 The private company must be authorised to redeem or purchase its own shares out of capital by its Articles of Association.
- 2 **Permissible capital payment** is the amount by which the price of redemption or purchase exceeds the aggregate of (a) the company's distributable profits and (b) the proceeds of any new issue. This means that a private company must use its available profits and any share proceeds before making a payment out of capital. (This is dealt with in greater detail in the next section.)
- 3 Directors must certify that, after the permissible capital payment, the company will be able to carry on as a going concern during the next twelve months, and be able to pay its debts immediately after the payment and also during the next twelve months.
- 4 The company's auditors make a satisfactory report.

### Activity 5.3

Why do you think the rules are less restrictive for private companies?

## 5.8 Permissible capital payments

- 1 Where the permissible capital payment is *less* than the nominal value of shares redeemed/purchased, the amount of the difference *shall* be transferred to the capital redemption reserve from the profit and loss appropriation account (or from undistributed profits).
- 2 Where the permissible capital payment is *greater* than the nominal value of shares redeemed/purchased, *any* non-distributable reserves (e.g. share premium account, capital redemption reserve, revaluation reserve, etc.) or fully paid share capital can be reduced by the excess.

This can best be illustrated by taking two companies, R and S, with similar account balances *before* the purchase/redemption, but they are redeeming their shares on different terms:

(Note: To ensure maximum clarity, the values used have been kept unrealistically low.)

### Exhibit 5.7

	Before £		Dr £		Cr £	After £
<b>Company R</b>						
Net assets (except bank)	2,500					2,500
Bank	<u>7,500</u>			(B2)	4,000	<u>3,500</u>
	<u>10,000</u>					<u>6,000</u>
Ordinary shares	1,000					1,000
Preference shares	4,000	(A1)	4,000			–
Non-distributable reserves	2,000					2,000
Capital redemption reserve				(C2)	3,000	3,000
Preference share purchase	–	(B1)	4,000	(A2)	4,000	
	<u>7,000</u>					
Profit and loss	<u>3,000</u>	(C1)	3,000			<u>–</u>
	<u>10,000</u>					<u>6,000</u>

The preference shares were redeemed at par, £4,000. No new issue was made.

(A1) and (A2) represent transfer of shares redeemed/purchased.

(B1) and (B2) represent payment to shareholders.

Therefore pay	£4,000
Less Profit and loss account	(3,000)
Permissible capital payment	<u>1,000</u>
Nominal amount of shares redeemed/purchased	£4,000
Less Permissible capital payment	(1,000)
Deficiency to transfer to capital redemption reserve (C1 and C2)	<u>3,000</u>

The steps taken were:	Dr	Cr
(A1) Preference shares	4,000	
(A2) Preference share purchase		4,000
(B1) Preference share purchase	4,000	
(B2) Bank		4,000
(C1) Profit and loss	3,000	
(C2) Capital redemption reserve		3,000

	Before £		Dr £		Cr £	After £
<b>Company S</b>						
Net assets (except bank)	2,500					2,500
Bank	<u>7,500</u>			(D2)	7,200	<u>300</u>
	<u>10,000</u>					<u>2,800</u>
Ordinary share capital	1,000					1,000
Preference shares	4,000	(A1)	4,000			–
Non-distributable reserves	2,000	(C1)	200			1,800
Capital redemption reserve	–					–
Preference share purchase		(D1)	7,200	(A2)	4,000	
				(B2)	3,000	
				(C2)	200	
	<u>7,000</u>					<u>2,800</u>
Profit and loss	<u>3,000</u>	(B1)	3,000			<u>–</u>
	<u>10,000</u>					<u>2,800</u>

The preference shares were redeemed/purchased at a premium of 80%. No new issue was made.

(A1) and (A2) represent shares redeemed/purchased.

(B1) and (B2) are transfers to redemption/purchase account of part of source of funds.

(D1) and (D2) are payment to shareholders.

Therefore pay	£7,200	
Less Profit and loss account	(3,000)	
Permissible capital payment	<u>4,200</u>	
Permissible capital payment	£4,200	
Less Nominal amount redeemed/purchased	(4,000)	
Excess from any of non-distributable reserves (or capital) (C1 and C2)	<u>200</u>	
The steps taken were:	<i>Dr</i>	<i>Cr</i>
(A1) Preference shares	4,000	
(A2) Preference share purchase		4,000
(B1) Profit and loss	3,000	
(B2) Preference share purchase		3,000
(C1) Non-distributable reserves	200	
(C2) Preference share purchase		200
(D1) Preference share purchase	7,200	
(D2) Bank		7,200

## 5.9

### Cancellation of shares purchased/redeemed

All shares purchased/redeemed must be cancelled immediately. They cannot be kept by the company and later traded.

## 5.10

### Redemption of debentures

Unless they are stated to be irredeemable, debentures are redeemed according to the terms of the issue. The necessary funds to finance the redemption may be from:

- (a) an issue of shares or debentures for the purpose;
- (b) the resources of the company.

As (a) resembles the redemption of redeemable preference shares, you won't be surprised to learn that no transfer of profits from the profit and loss appropriation account to a reserve account is needed. However, when financed as in (b), it is good accounting practice, although not legally necessary, to divert profits from being used as dividends by transferring an amount equal to the nominal value redeemed from the debit of the profit and loss appropriation account to the credit of a reserve account.

Redemption may be done in one of three ways:

- (a) by annual transfers out of profits;
- (b) by purchase in the open market when the price is favourable, i.e. when it is less than the price which will have to be paid if the company waits until the last date by which redemption has to be carried out;
- (c) in a lump sum to be provided by the accumulation of a **sinking fund**.

These three approaches can now be examined in more detail.



## 1 Redeemed by transfers out of profits

### (a) When redeemed at a premium

In this case, the source of the funds with which the premium is paid should be taken to be (i) the share premium account, or if this does not exist, or the premium paid is in excess of the balance on the share premium account, then any part not covered by a share premium account is deemed to come from (ii) the profit and loss appropriation account. Exhibit 5.8 shows the effect on a balance sheet where there is no share premium account, while Exhibit 5.9 illustrates the case when a share premium account is in existence with a balance large enough to source the premium.

#### Exhibit 5.8

Starting with the *before* balance sheet, £400 of the debentures are redeemed at a premium of 20 per cent, i.e. £80.

(Note: As before, the values involved have been kept unrealistically low for greater clarity.)

Balance Sheets			
	<i>Before</i>	<i>+ or –</i>	<i>After</i>
	£	£	£
Other assets	12,900		12,900
Bank	<u>3,400</u>	–480 (A)	<u>2,920</u>
	<u>16,300</u>		<u>15,820</u>
Share capital	10,000		10,000
Debenture redemption reserve	–	+400 (B)	400
Debentures	2,000	–400 (A)	1,600
Profit and loss	4,300	–400 (B)	
	<u>16,300</u>	–80 (A)	<u>3,820</u>
			<u>15,820</u>

#### Exhibit 5.9

Starting with the *before* balance sheet, £400 of the debentures are redeemed at a premium of 20 per cent, i.e. £80.

Balance Sheets			
	<i>Before</i>	<i>+ or –</i>	<i>After</i>
	£	£	£
Other assets	13,500		13,500
Bank	<u>3,400</u>	–480 (A)	<u>2,920</u>
	<u>16,900</u>		<u>16,420</u>
Share capital	10,000		10,000
Share premium	600	–80 (A)	520
Debenture redemption reserve	–	+400 (B)	400
Debentures	2,000	–400 (A)	1,600
Profit and loss	4,300	–400 (B)	3,900
	<u>16,900</u>		<u>16,420</u>

In both Exhibits 5.8 and 5.9 the balance on the debenture redemption reserve account is increased by the nominal value of the debentures redeemed each year. Any element of the redemption sourced by the share premium account is entered as a debit to that account and is not included in the debenture redemption reserve.

When the whole issue of debentures has been redeemed, the balance on the debenture redemption reserve account is transferred to the credit of a general reserve account. It is, after all, an accumulation of undistributed profits.

### (b) When redeemed but originally issued at a discount

The discount was given in order to attract investors to buy the debentures and is, therefore, as much a cost of borrowing as is debenture interest. The discount therefore needs to be written off during the life of the debentures. It might be more rational to write it off to the profit and loss account but accounting custom, as permitted by law, would first of all write it off against any share premium account and, secondly, against the profit and loss appropriation account.

The amounts written off over the life of the debentures are:

- (a) equal annual amounts over the life of the debentures, or
- (b) in proportion to the debenture debt outstanding at the start of each year. Exhibit 5.10 shows such a situation.

#### Exhibit 5.10

£30,000 debentures are issued at a discount of 5 per cent. They are repayable at par over five years at the rate of £6,000 per annum.

Year	Outstanding at start of each year	Proportion written off	Amount
	£		£
1	30,000	$\frac{30}{90} \times £1,500$	= 500
2	24,000	$\frac{24}{90} \times £1,500$	= 400
3	18,000	$\frac{18}{90} \times £1,500$	= 300
4	12,000	$\frac{12}{90} \times £1,500$	= 200
5	6,000	$\frac{6}{90} \times £1,500$	= 100
	<u>90,000</u>		<u>1,500</u>

## 2 Redeemed by purchase in the open market

A sum equal to the cash actually paid on redemption is transferred from the debit of the profit and loss appropriation account to the credit of the debenture redemption reserve account. The sum actually paid will have been credited to the Cash Book and debited to the debentures account.

Any discount (or profit) on purchase will be transferred to a reserve account. Any premium (or loss) on purchase will be deemed to come out of such a reserve account, or if no such account exists or if it is insufficient, then it will be deemed to come out of the share premium account. Failing the existence of these accounts any loss must come out of the profit and loss appropriation account. It may seem that purchase would not be opportune if the debentures had to be redeemed at a premium. However, it would still be opportune if the premium paid was not as high as the premium to be paid if the final date for redemption was awaited.

## 3 Redemption of debentures sourced from a sinking fund

Where debentures are issued which are redeemable (which most are) consideration should be given to the availability of cash funds at the time.

This method involves the investment of cash outside the business. The aim is to make a regular investment of money which, together with the accumulated interest or dividends, is sufficient to finance the redemption of the debentures at the requisite time.

As each period's interest (or dividend) from the investment is received, it is immediately reinvested to earn more interest. In addition, an equal amount is invested each period.

If, for example, the money is to be invested at 5 per cent per annum, and the debenture is £500 to be redeemed in five years' time, how much should be invested each year? If £100 were invested at the start of each year for five years, the interest earned would mean that more than £500 was set aside by the end of the five-year period. Therefore, an amount less than £100 per annum is needed. The exact amount can be calculated by the use of the compound interest formula. Chapter 45 illustrates how the amount needed can be calculated. As these calculations are left until later in this book, a summarised set of tables is shown below in Exhibit 5.11.

### Exhibit 5.11

Annual sinking fund instalments to provide £1

Years	3%	3½%	4%	4½%	5%
3	0.323530	0.321933	0.320348	0.318773	0.317208
4	0.239028	0.237251	0.235490	0.233744	0.232012
5	0.188354	0.186481	0.184627	0.182792	0.180975
6	0.154597	0.152668	0.150761	0.148878	0.147017
7	0.130506	0.128544	0.126609	0.124701	0.122819
8	0.112456	0.110476	0.108527	0.106609	0.104721
9	0.098433	0.096446	0.094493	0.092574	0.090690
10	0.087230	0.085241	0.083291	0.081378	0.079504

The table gives the amount required to provide £1 at the end of the relevant number of years at a given rate of interest. To provide £1,000 multiply by 1,000; to provide for £4,986 multiply by 4,986; and so on.

Now, let's look at the double entries required when a **sinking fund** is being used.

## 5.11 Double entries for a sinking fund

When the annual instalment has been found, the double entry needed each year is:

- 1 Annual instalment:  
*Dr Profit and loss appropriation*  
*Cr Debenture redemption reserve*
- 2 Investment of 1st instalment:  
*Dr Debenture sinking fund investment*  
*Cr Bank*
- 3 Interest/dividends on sinking fund investment:  
*Dr Bank*  
*Cr Debenture redemption reserve*
- 4 Investment of second and later instalments (these consist of equal annual instalment plus interest/dividend just received):  
*Dr Debenture sinking fund investment*  
*Cr Bank*

**Exhibit 5.12**

Debentures of £10,000 are issued on 1 January 20X1. They are redeemable five years later on 31 December 20X5 on identical terms (i.e. £10,000). The company therefore decides to set aside an equal annual amount which, at an interest rate of 5 per cent, will provide £10,000 on 31 December 20X5. According to the table in Exhibit 5.11, £0.180975 invested annually at 5 per cent will provide £1 in five years' time. Therefore,  $£0.180975 \times 10,000$  will be needed annually = £1,809.75.

*Profit and Loss Appropriation for years ended 31 December*

(20X1) Debenture redemption reserve	1,809.75
(20X2) Debenture redemption reserve	1,809.75
(20X3) Debenture redemption reserve	1,809.75
(20X4) Debenture redemption reserve	1,809.75
(20X5) Debenture redemption reserve	1,809.75

**Debenture Redemption Reserve**

	£		£
20X1		20X1	
Dec 31 Balance c/d	<u>1,809.75</u>	Dec 31 Profit and loss	<u>1,809.75</u>
20X2		20X2	
Dec 31 Balance c/d	3,709.99	Jan 1 Balance b/d	1,809.75
		Dec 31 Bank interest	
		(5% of £1,809.75)	90.49
		Dec 31 Profit and loss	<u>1,809.75</u>
	<u>3,709.99</u>		<u>3,709.99</u>
20X3		20X3	
Dec 31 Balance c/d	5,705.23	Jan 1 Balance b/d	3,709.99
		Dec 31 Bank interest	
		(5% of £3,709.99)	185.49
		Dec 31 Profit and loss	<u>1,809.75</u>
	<u>5,705.23</u>		<u>5,705.23</u>
20X4		20X4	
Dec 31 Balance c/d	7,800.24	Jan 1 Balance b/d	5,705.23
		Dec 31 Bank interest	
		(5% of £5,705.23)	285.26
		Dec 31 Profit and loss	<u>1,809.75</u>
	<u>7,800.24</u>		<u>7,800.24</u>
20X5		20X5	
Dec 31 Debentures now redeemed	10,000.00	Jan 1 Balance b/d	7,800.24
		Dec 31 Bank interest	
		(5% of £7,800.24)	390.01
	<u>10,000.00</u>	Dec 31 Profit and loss	<u>1,809.75</u>
			<u>10,000.00</u>

**Debenture Sinking Fund Investment**

	£		£
20X1			
Dec 31 Bank	1,809.75		
20X2			
Dec 31 Bank <sup>Note (a)</sup>	1,900.24		
20X3			
Dec 31 Bank <sup>Note (b)</sup>	1,995.24		
20X4			
Dec 31 Bank <sup>Note (c)</sup>	2,095.01		
25X5		20X5	
Dec 31 Bank <sup>Note (d)</sup>	<u>2,199.76</u>	Dec 31 Bank	<u>10,000.00</u>
	<u>10,000.00</u>		<u>10,000.00</u>

**Notes:**

<i>Cash invested</i>	(a)	(b)	(c)	(d)
	£	£	£	£
The yearly instalment	1,809.75	1,809.75	1,809.75	1,809.75
Add interest received on sinking fund balance	<u>90.49</u>	<u>185.49</u>	<u>285.26</u>	<u>309.01</u>
	<u>1,900.24</u>	<u>1,995.24</u>	<u>2,095.01</u>	<u>2,199.76</u>

**Bank (extracts)**

20X1	£	20X1	£
Jan 1 Debentures (issued)	10,000.00	Dec 31 Debenture sinking fund investment	1,809.75
20X2		20X2	
Dec 31 Debenture redemption reserve (interest on investment)	90.49	Dec 31 Debenture sinking fund investment	1,900.24
20X3		20X3	
Dec 31 Debenture redemption reserve (interest on investment)	185.49	Dec 31 Debenture sinking fund investment	1,995.24
20X4		20X4	
Dec 31 Debenture redemption reserve (interest on investment)	285.26	Dec 31 Debenture sinking fund investment	2,095.01
20X5		20X5	
Dec 31 Debenture redemption reserve (interest on investment)	390.01	Dec 31 Debenture sinking fund	2,199.76
31 Debenture sinking fund	<u>10,000.00</u>	31 Debenture (redemption)	10,000.00
	<u>20,000.00</u>		<u>20,000.00</u>

**Debentures**

20X5	£	20X1	£
Dec 31 Bank (redemption)	<u>10,000.00</u>	Jan 1 Bank	<u>10,000.00</u>

The final payment into the sinking fund of £2,199.76 would probably not physically happen unless it was a condition of the investment that a fifth deposit was made before the amount invested could be withdrawn. (There is no point in paying money out of the bank account into the sinking fund and then, on the same day, withdrawing it from the sinking fund and redepositing it in the bank account.) The entries are presented in this way so as to make it clear that the entire £10,000 has been set aside over the five years. If no transfer was shown (of the £2,199.76), the balance on the sinking fund would be £7,800.24 and this amount would be transferred to the bank account. The amount available in the bank account would still be £10,000.

Sometimes debentures bought in the open market are not cancelled, but are kept 'alive' and are treated as investments of the sinking fund. The annual appropriation of profits is credited to the sinking fund account, while the amount expended on the purchase of the debentures is debited to the sinking fund investment account. Interest on such debentures is debited to the profit and loss account and credited to the sinking fund account, thus the interest, as far as the sinking fund account is concerned, is treated in the same fashion as if it was cash actually received by the firm

from an outside investment. The sum expended on investments will then be equal to the annual appropriation + the interest on investments actually received + the interest on debentures kept in hand.

## 5.12 Convertible loan stock

Particularly in periods of high inflation but at other times too, the attraction to lenders to provide funds at reasonable rates of interest is much reduced as they stand to lose significantly on the real value of the funds lent, since the repayment of the loan is normally fixed at its original cash value. One way of attracting lenders is to give them the right to convert their loan into shares. The right can usually be exercised at a given rate of conversion from loan to shares, once a year over a stated length of time. The value of the conversion right will depend on the performance of the shares in the market. If the shares increase in value significantly, the conversion value will increase and attract the lender to opt into shares. If the shares do badly, the lender can retain the loan stock with its higher levels of security.

The accounting entries are the same as those described in Section 5.10 for the redemption of debentures. The value of the shares issued to meet the redemption will be fixed under the terms of the original agreement by reference to their market prices at specified dates.

### Learning outcomes

**You should now have learnt:**

- 1** The difference between the terms 'redemption' and 'purchase' in the context of shares and debentures.
- 2** How to make the accounting entries relating to the redemption or purchase by a company of its own shares.
- 3** That the accounting entries made on the redemption by a company of its own shares are the same as when it purchases its own shares, except that the word 'redeemable' will appear as the first word in the title of the accounts for shares that are redeemed.
- 4** That in order to protect creditors, companies *must* still have irredeemable shares in issue after undertaking any purchase or redemption of its own shares.
- 5** That a company cannot redeem or purchase its own shares unless they are fully paid.
- 6** That the rules on reserves to use when purchasing or issuing their own shares at a premium are less strict for private companies.
- 7** How to make the accounting entries relating to the redemption or purchase by a company of its own debentures.
- 8** That debentures are redeemed according to the terms of their issue.

## Answers to activities

- 5.1** Apart from moving into line with the rest of Europe, the restriction that remained (of having one member, i.e. shareholder) minimised the risk of abuse of creditors, which was the main reason for having the rule preventing purchase and redemption in the first place.
- 5.2** If this occurred, it would suggest that the company issued them only to have free use of the funds they realised for a short time. In effect, they were simply a form of interest-free loan. By requiring that shares be fully paid before being redeemed or purchased back by the company, the possibility that companies would engage in this form of sharp practice is minimised.
- 5.3** Private companies are much smaller than public ones. Their shares are often held by a far smaller group of shareholders, often all known to each other. There is not, therefore, the same need to protect shareholders, but there is often a greater need to assist shareholders wishing to reduce their shareholdings. Private companies also tend to have far smaller and less extensive groups of creditors in need of protection. If you refer back to the advantages listed in Section 5.2, you can see why it is important that private companies have greater flexibility in this respect than public ones.

## Review questions

- 5.1** Exercises (a) to (e) are based on the following balance sheet.

### RSV Ltd Balance Sheet

	£
Net assets (except bank)	20,000
Bank	13,000
	<u>33,000</u>
Preference share capital	5,000
Ordinary share capital	15,000
Share premium	<u>2,000</u>
	22,000
Profit and loss	<u>11,000</u>
	<u>33,000</u>

Note also that each of exercises (a) to (e) is independent of any other. The exercises are not cumulative.

#### Required:

- RSV Ltd redeems £5,000 preference shares at par, a new issue of £5,000 ordinary shares at par being made for the purpose. Show the balance sheet after completion of these transactions. Workings are to be shown as journal entries.
- RSV Ltd redeems £5,000 preference shares at par, with no new issue of shares to provide funds. Show the balance sheet after completing the transaction. Workings: show journal entries.
- RSV Ltd redeems £5,000 preference shares at par. To help finance this an issue of £1,500 ordinary shares at par is effected. Show the balance sheet after these transactions have been completed; also show the necessary journal entries.
- RSV Ltd redeems £5,000 preference shares at a premium of 25 per cent. There is no new issue of shares for the purpose. In this question the share premium account is taken as being from the issue of ordinary shares some years ago. Show the balance sheet after these transactions have been completed, and the supporting journal entries.
- RSV Ltd redeems £5,000 preference shares at a premium of 40 per cent. There is an issue of £7,000 ordinary shares at par for the purpose. The preference shares had originally been issued at a premium of 30 per cent. Show the balance sheet after these transactions have been completed, and also the supporting journal entries.

**5.2A** Exercises (a) to (e) are based on the following balance sheet.

BAR Ltd Balance Sheet	
	£
Net assets (except bank)	31,000
Bank	<u>16,000</u>
	<u>47,000</u>
Preference share capital	8,000
Ordinary share capital	20,000
Share premium	<u>4,000</u>
	32,000
Profit and loss	<u>15,000</u>
	<u>47,000</u>

Note also that exercises (a) to (e) are independent of each other. They are not cumulative.

**Required:**

- BAR Ltd purchases £10,000 of its own ordinary share capital at par. To help finance this £7,000 preference shares are issued at par. Show the necessary journal entries and the balance sheet after the transactions have been completed.
- BAR Ltd purchases £12,000 of its own ordinary shares at a premium of 20 per cent. No new issue of shares is made for the purpose. It is assumed that the share premium account is in respect of the issue of preference shares some years before. Show the balance sheet after the transactions have been completed, and also the supporting journal entries.
- BAR Ltd purchases all the preference share capital at par. These shares were not originally redeemable preference shares. There is no new issue of shares to provide funds. Show the requisite journal entries, and the closing balance sheet when the transaction has been completed.
- BAR Ltd purchases £12,000 of its own ordinary shares at par, a new issue of £12,000 preference shares at par being made for the purpose. Show the journal entries needed and the balance sheet after completing these transactions.
- BAR Ltd purchases £6,000 ordinary shares at a premium of 50 per cent. They had originally been issued at a premium of 20 per cent. There is an issue of £10,000 preference shares at par for the purpose. Show the amended balance sheet, together with the journal entries.

**5.3** A company's balance sheet appears as follows:

	£
Net assets (except bank)	12,500
Bank	<u>13,000</u>
	<u>25,500</u>
Preference share capital	5,000
Ordinary share capital	10,000
Non-distributable reserves	<u>6,000</u>
	21,000
Profit and loss	<u>4,500</u>
	<u>25,500</u>

**Required:**

- If £6,000 of the ordinary shares were purchased at par, there being no new issue of shares for the purpose, show the journal entries to record the transactions and the amended balance sheet.
- If, instead of (a), £6,000 ordinary shares were purchased at a premium of 100 per cent, there being no new issue of shares for the purpose, show the journal entries to record the transactions and the amended balance sheet.







**5.4A** Debentures of £30,000 are issued on 1 January 20X3. Redemption is to take place, on equal terms, four years later. The company decides to put aside an equal amount to be invested at 5 per cent which will provide £30,000 on maturity. Tables show that £0.232012 invested annually will produce £1 in four years' time.

**You are required to show:**

- (a) debenture redemption reserve account
- (b) debenture sinking fund investment account
- (c) debentures account
- (d) profit and loss account extracts.

**5.5** Some years ago M plc had issued £375,000 of 10 per cent debentures 20X6/20X0 at par. The terms of the issue allow the company the right to repurchase these debentures for cancellation at or below par, with an option to redeem, at a premium of 1 per cent, on 30 September 20X6. To exercise this option the company must give three months' notice, which it duly did on 30 June 20X6 indicating its intention to redeem all the debentures outstanding at 30 September 20X6.

M plc had established a sinking fund designed to accumulate the sum of £378,750 by 30 September 20X6 and had appropriated profits annually and invested these, together with the interest from such investments and the profits made on any realisations from time to time. A special No. 2 bank account was established specifically to deal with the receipts and payments relating to the debentures and the sinking fund.

By 30 June 20X6 annual contributions amounting to £334,485, together with the interest on the sinking fund investments of £39,480, had all been invested except for £2,475 which remained in the No. 2 bank account at that date.

The only investments sold, prior to 30 June 20X6, had cost £144,915 and realised £147,243. This was used to repurchase debentures with a par value of £150,000.

Transactions occurring between 1 July and 30 September 20X6 were:

- (i) interest received on the sinking fund investments:
 

7 July	£1,756
13 September	£1,455
- (ii) proceeds from the sale of investments:
 

2 August	£73,215 (book value was £69,322)
25 September	£160,238 (remaining investments)
- (iii) redemption of all the debentures, on 30 September, with the exception of £15,000 held by B Limited. The company had received notice of a garnishee order.\*
- (iv) M plc deposited with the W Bank plc the sum of £15,150 on 30 September 20X6.

You are to ignore debenture interest and income tax.

**You are required,** from the information given above, to prepare the ledger accounts (including the No. 2 bank account) in the books of M plc for the period 30 June to 30 September 20X6, showing the transfer of the final balances to the appropriate accounts.

*\*Note – Garnishee order*

This order, issued by the court, instructs M plc not to release the money owing to B Limited until directed by the court to do so.

*(Chartered Institute of Management Accountants)*

**5.6A** The following information relates to White Rabbit Trading plc:**Summarised Balance Sheet as at 31 January 20X7**

	<i>£000</i>
<i>Fixed assets</i>	2,400
<i>Investments</i>	120
<i>Net current assets</i>	<u>1,880</u>
	<u>4,400</u>
<i>Financed by:</i>	<i>£000</i>
<i>Capital and reserves</i>	
Ordinary shares of 50p each fully paid	2,000
Redeemable shares of £1 each (20X7/20X1)	500
Share premium	200
Revaluation surplus	400
Profit and loss account	<u>900</u>
	4,000
<i>Long-term liabilities</i>	
8% debentures (20X7/20X0)	<u>400</u>
	<u>4,400</u>

On 1 February 20X7 the company closed the list of applications for 400,000 ordinary shares at a premium of 50p. The shares were to be paid for as follows: 60p on application, 25p on allotment and 15p on the first and final call, which was to be made on 1 May 20X7. A total of £1,320,000 was received, the shares were allotted and £1,032,000 was returned to unsuccessful applicants. The call money was received by 31 May from all shareholders, with the exception of two shareholders, one of whom had been allotted 500 shares. The other subscriber for 100 shares still owed £25 for allotment in addition to the call money. Eventually both lots of shares were forfeited and reissued to an existing shareholder for a payment of £500 which was duly received.

At a board meeting on 15 February 20X7 the directors decided to make a fresh issue of 500,000 £1 redeemable shares at a premium of 60p, and to redeem all of the existing redeemable shares at a premium of 40p. The shares had originally been issued for £1.20 each. All moneys due on application were duly received by 31 March 20X7, and the redemption took place on 6 April 20X7.

In January 20X5 White Rabbit Trading plc had purchased, for cash, 80,000 25p ordinary shares in March Hares Ltd for £25,000, and this is included in investments on the balance sheet at 31 January 20X7. On 1 April 20X7 the company purchased 400,000 out of a total issue of 500,000 25p ordinary shares in March Hares Ltd, by exchanging 200,000 of its own ordinary shares.

The 8 per cent debentures were redeemed on 15 May 20X7 at a 10 per cent premium, and on the same date £500,000 7 per cent debentures (20X0/20X3) were issued at a discount of 5 per cent.

**Required:**

Show the full journal entries to record the above events, including cash/bank transactions, in the books of White Rabbit Trading plc.

(Association of Chartered Certified Accountants)

**5.7** During the year to 30 September 20X9, Popham plc issued 100,000 £1 ordinary shares. The terms of the offer were as follows:

20X9		£
31 March	on application	0.30 (including the premium)
30 April	on allotment	0.70
30 June	first and final call	0.20

Applications were received for 200,000 shares. The directors decided to allot the shares on the basis of 1 for every 2 shares applied for and apply the excess application money received against the amount due on allotment.



All amounts due on application and allotment were received on the due dates, with the exception of one shareholder who had been allotted 10,000 shares, and who defaulted on the first and final call. These shares were forfeited on 31 July 20X9, and reissued on 31 August 20X9 at a price of £1.10 per share.

**Required:**

Write up the above details in the books of account of Popham plc using the following ledger accounts:

- (i) application and allotment
- (ii) first and final call
- (iii) investment – own shares.

(Association of Accounting Technicians)

**5.8A** Alas plc has an authorised share capital of 150,000 ordinary shares of £10 each. Upon incorporation, 50,000 shares were issued and fully paid. The company has decided to issue another 50,000 shares, the details of which are as follows:

Upon:	Per share £
Application	3
Allotment (including a premium of £5)	8
First call	2
Final call	<u>2</u>
	<u>15</u>

**Additional information:**

- 1 Applications were received for 85,000 shares out of which 10,000 shares were rejected, the cash being returned immediately to the applicants. The remaining applicants were allotted two shares for every three shares applied for, and the surplus application money was carried forward to the allotment stage.
- 2 The total amount due on allotment was duly received.
- 3 All cash due at the first call was received, but the final call resulted in 5,000 shares being forfeited. These shares were subsequently reissued at a price of £13 per share.

**Required:**

Compile the following ledger accounts:

- (a) ordinary share capital
- (b) ordinary share applications
- (c) ordinary share allotment
- (d) share premium
- (e) ordinary share first call
- (f) ordinary share final call
- (g) investments – own shares (originally known as the forfeited shares account).

**5.9** The following information relates to Grigg plc:

- 1 On 1 April 20X8 the company had £100,000 10 per cent debentures in issue. The interest on these debentures is paid on 30 September and 31 March.
- 2 The debenture redemption fund balance (relating to the redemption of these debentures) at 1 April 20X8 was £20,000. This fund is being built up by annual appropriations of £2,000. The annual appropriation (along with any dividends or interest on the investments) is invested on 31 March.
- 3 Debenture redemption fund investments can be realised at any time in order to purchase debentures in the open market either at or below par value. Such debentures are then cancelled.
- 4 On 31 December 20X8 £10,000 of investments were sold for £11,400, and the proceeds were used to purchase debentures with a par value of £12,000.

5 Dividends and interest on redemption fund investments during the year to 31 March 20X9 amounted to £1,600.

6 The cost of dealing with the above matters and any taxation effects may be ignored.

**Required:**

Write up the following ledger accounts for the year to 31 March 20X9:

- (a) 10 per cent debentures
- (b) debenture redemption fund
- (c) debenture redemption fund investments
- (d) debenture redemption
- (e) debenture interest.

*Note:* The debenture redemption fund is sometimes known as a **sinking fund**.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Limited companies taking over other businesses

## Learning objectives

After you have studied this chapter, you should be able to:

- explain how goodwill may arise on the purchase of a business
- explain the difference between goodwill and negative goodwill
- record the accounting entries relating to a limited company taking over another business
- describe the difference in the accounting treatment of takeovers by limited companies of sole traders, partnerships and limited companies
- describe the two methods whereby a limited company may take over another limited company
- deal with pre-incorporation profits and losses

## Introduction

In this chapter, you'll learn about goodwill and negative goodwill and you will learn how to record the purchase of a business in the books of the purchaser using a variety of methods of paying for the purchase. You will also learn about how to deal with pre-incorporation losses and profits.

### 6.1 Background

From time to time, limited companies take over other businesses which are in existence as going concerns. The purchase may be: (i) in cash; (ii) by giving the company's shares to the sellers; (iii) by giving the company's debentures; or (iv) by any combination of the three.

Never be mistaken into thinking that because the assets bought are shown in the selling entity's books at one value, the purchasing company must record the assets taken over in its own books at the same value. The values shown in the purchasing company's books are those values at which the company is buying the assets (known as their 'fair' values), such values being frequently quite different than those shown in the selling firm's books.

For example, the selling entity may have bought premises many years earlier for £100,000 which are now worth £250,000. The company buying the premises will obviously have to pay £250,000 for the premises and it is this value that is recorded in the buying company's books. Alternatively, if its value has fallen, the value at which it is recorded in the buying company's books would be less than that shown in the selling entity's books.

The recording of the transactions is the simple part. The negotiations that take place before agreement is reached, and the various strategies undertaken by the various parties, are a study in themselves. The accounting entries are, in effect, the tip of the iceberg, i.e. that part of the whole affair which is seen by the eventual reader of the financial statements.

Where the total purchase consideration exceeds the total value of the identifiable assets as recorded in the ledger of the purchasing company, the excess is the **goodwill**, and is entered as a debit in a goodwill account in the purchasing company's books.

Should the total purchase consideration be less than the values of the identifiable assets recorded in the purchasing company's ledger, the difference is known as **negative goodwill** and is entered as a credit in the goodwill account. (Note: the goodwill amount is *always* shown in the assets section of the balance sheet, even when it has a credit balance.)

### Activity 6.1

Why do you think the amount paid for a business may be different from the total value of its net assets as shown in its financial statements?

Let's now look at how business takeovers are recorded in the accounting records of the purchaser.

## 6.2 Taking over a sole trader

We'll start with the takeover of the simplest sort of business unit, that of a sole trader. Some of the balance sheets shown will be deliberately simplified so that the principles involved are not hidden behind a mass of complicated calculations.

### Exhibit 6.1

Earl Ltd is to buy the business of M Kearney. The purchase consideration is to be £60,000 cash, the company placing the following values on the assets taken over – machinery £30,000; stock £10,000. The goodwill must therefore be £20,000, because the total price of £60,000 exceeds the sum of the values of the machinery £30,000 and stock £10,000 by £20,000. The company's balance sheets before and after the takeover are shown below:

M Kearney Balance Sheet			
	£		
Machinery			30,000
Stock			10,000
			<u>40,000</u>
Capital			<u>40,000</u>

Earl Ltd Balance Sheets			
	Before £	+ or – £	After £
Goodwill		+20,000	20,000
Machinery	110,000	+30,000	140,000
Stock	50,000	+10,000	60,000
Bank	90,000	–60,000	30,000
	<u>250,000</u>		<u>250,000</u>
Share capital	200,000		200,000
Profit and loss	50,000		50,000
	<u>250,000</u>		<u>250,000</u>

If shares had been issued to Kearney instead of cash, the new balance sheet of Earl Ltd would be as above except that bank would be £90,000 and share capital would be £260,000, as shown in Exhibit 6.2.

### Exhibit 6.2

Earl Ltd Balance Sheets			
	<i>Before</i> £	<i>+ or –</i> £	<i>After</i> £
Goodwill		+20,000	20,000
Machinery	110,000	+30,000	140,000
Stock	50,000	+10,000	60,000
Bank	90,000		90,000
	<u>250,000</u>		<u>310,000</u>
Share capital	200,000	+60,000	260,000
Profit and loss	50,000		50,000
	<u>250,000</u>		<u>310,000</u>

### Exhibit 6.3

If the purchase had been made by issuing 50,000 shares of £1 each at a premium of 50 per cent, then the total consideration would have been worth £75,000 which, if the assets of £40,000 are deducted, leaves goodwill of £35,000. The balance sheets would then be:

Earl Ltd Balance Sheets			
	<i>Before</i> £	<i>+ or –</i> £	<i>After</i> £
Goodwill		+35,000	35,000
Machinery	110,000	+30,000	140,000
Stocks	50,000	+10,000	60,000
Bank	90,000		90,000
	<u>250,000</u>		<u>325,000</u>
Share capital	200,000	+50,000	250,000
Share premium		+25,000	25,000
Profit and loss	50,000		50,000
	<u>250,000</u>		<u>325,000</u>

You should now realise just how straightforward the balance sheet changes are. You simply adjust the balance sheet for the assets (and liabilities) acquired and for the items used in order to complete the purchase. Whatever the difference is between the two parts of the balance sheet, must be the goodwill.

In each of Exhibits 6.1 to 6.4 it has been assumed that all transactions were started and completed at the same time. In reality, an intermediary account would first be created but then closed almost immediately when the purchase consideration was handed over.

Taking Exhibit 6.3 as an example, a credit entry will be made in the share capital account and another in the share premium account, plus debit entries in the goodwill, machinery and stock accounts. Think about this. Shares cannot be issued to goodwill, machinery or stocks. They have, in fact, been issued to M Kearney. This means that there should have been an account for M Kearney involved in the double entries, but the balance on it was cancelled when the purchase was completed. The actual accounts used for Exhibit 6.3 in the books of Earl Ltd were:

**Exhibit 6.4**

If the purchase had been made by the issue of 10,000 shares of £1 each at a premium of 40 per cent, £30,000 worth of 7 per cent debentures at par and £40,000 in cash, the total purchase consideration would be ordinary shares valued at £14,000, debentures valued at £30,000 and £40,000 in cash, making a total of £84,000. The assets are valued at £40,000, so the goodwill must be £44,000. The balance sheets would be:

<b>Earl Ltd Balance Sheets</b>			
	<i>Before</i> £	<i>+ or –</i> £	<i>After</i> £
Goodwill		+44,000	44,000
Machinery	110,000	+30,000	140,000
Stocks	50,000	+10,000	60,000
Bank	90,000	–40,000	50,000
	<u>250,000</u>		<u>294,000</u>
Less Debentures	–	+30,000	( 30,000)
	<u>250,000</u>		<u>264,000</u>
Share capital	200,000	+10,000	210,000
Share premium		+4,000	4,000
Profit and loss	50,000		50,000
	<u>250,000</u>		<u>264,000</u>

**Share Premium**

	£
M Kearney	25,000

**Share Capital**

	£		£
Balance c/d	250,000	Balance b/d	200,000
	<u>250,000</u>	M Kearney	50,000
			<u>250,000</u>
		Balance b/d	250,000

**Profit and Loss**

	£
Balance b/d	50,000

**Goodwill**

	£
M Kearney	35,000

**Machinery**

	£		£
Balance b/d	110,000	Balance c/d	140,000
M Kearney	30,000		
	<u>140,000</u>		<u>140,000</u>
Balance b/d	140,000		



Stock			
	£		£
Balance b/d	50,000	Balance c/d	60,000
M Kearney	<u>10,000</u>		
	<u>60,000</u>		<u>60,000</u>
Balance b/d	60,000		

(The £10,000 may have been entered in the purchases account. However, Kearney's £10,000 stock obviously increased the actual amount of stock held after the takeover of Kearney's business.)

Bank			
	£		
Balance b/d	90,000		

M Kearney			
	£		£
Consideration passing:		Assets taken over:	
Share capital	50,000	Goodwill	35,000
Share premium	25,000	Machinery	30,000
	<u>75,000</u>	Stock	<u>10,000</u>
			<u>75,000</u>

Some accountants would have preferred to use a business purchase account instead of a personal account such as that of M Kearney.

Sometimes the company taking over the business of a sole trader pays for the assets and takes over the creditors of the business acquired. Take the case of a sole trader with assets valued at premises £50,000 and stock of £40,000. To gain control of these assets, a company is to pay the sole trader £110,000 in cash. In addition, the company will pay off the creditors £10,000. Goodwill is, therefore, £30,000:

<i>Paid by the company to gain control of the sole trader's assets:</i>	£
Cash to the sole trader	110,000
Cash to the sole trader's creditors	<u>10,000</u>
	120,000
 The company receives assets:	£
Premises	50,000
Stock	<u>40,000</u>
	( 90,000)
Excess paid for goodwill	<u>30,000</u>

## 6.3 Taking over a partnership

The entries are virtually the same as those made when taking over a sole trader. The main difference is the distribution of the purchase consideration. In the case of a sole trader, the sole trader gets all of it. In a partnership, it has to be divided between the partners.

This means that a partnership realisation account will have to be drawn up to calculate the profit or loss on sale of the partnership business which is attributable to each partner. The profit or loss on sale will then be shared between the partners in their profit/loss-sharing ratios.

The double entry needed *in the partnership books* is:

- (A) Transfer assets being disposed of to the realisation account:
- Dr Realisation
- Cr Assets (various)

- (B) Transfer liabilities being disposed of to the realisation account:

*Dr* Liabilities (various)

*Cr* Realisation

- (C) Enter purchase price:

*Dr* Limited company (purchaser)

*Cr* Realisation

- (D) If profit on sale:

*Dr* Realisation

*Cr* Partners' capitals (profit-sharing ratio)

- (E) If loss on sale:

*Dr* Partners' capitals (profit-sharing ratio)

*Cr* Realisation

- (F) Receipt purchase price:

*Dr* Cash

*Dr* Shares (if any) in limited company

*Dr* Debentures (if any) in limited company

*Cr* Limited company (purchaser)

- (G) Final settlement with partners:

*Dr* Partners' capital and current accounts

*Cr* Cash

*Cr* Shares (if any) in limited company

*Cr* Debentures (if any) in limited company

Exhibit 6.5 shows how this is done.

### Exhibit 6.5

Kay and Lee were in partnership, sharing profits and losses in the ratio 2:1 respectively. The following was their balance sheet as at 31 December 20X4.

Kay and Lee Balance Sheet as at 31 December 20X4		
<i>Fixed assets</i>		£
Buildings		300,000
Motor vehicles		<u>150,000</u>
		450,000
<i>Current assets</i>		
Stock	80,000	
Debtors	60,000	
Bank	<u>10,000</u>	
	150,000	
<i>Current liabilities</i>		
Creditors	( <u>50,000</u> )	
		<u>100,000</u>
		<u>550,000</u>
<i>Capitals: Kay</i>	320,000	
Lee	<u>160,000</u>	
		480,000
<i>Current accounts: Kay</i>	30,000	
Lee	<u>40,000</u>	
		<u>70,000</u>
		<u>550,000</u>





On 1 January 20X5, Cayley Ltd took over the assets, other than bank. The purchase price is £800,000, payable by £600,000 in £1 shares in Cayley Ltd at par, plus £200,000 cash. Kay and Lee will pay off their own creditors. Shares are to be divided between the partners in their profit-sharing ratio.

First, let's look at the closing entries in the accounts of Kay and Lee. The only asset account shown will be the bank account. The creditors' accounts are also not shown. The letters in brackets refer to the description of the double entry already given.

### Books of Kay and Lee

#### Realisation

Assets taken over:			£				£
Buildings	(A)	300,000		Cayley Ltd	(C)	800,000	
Motor vehicles	(A)	150,000					
Stock	(A)	80,000					
Debtors	(A)	60,000					
Profit on realisation:							
Kay $\frac{2}{3}$	(D)	140,000					
Lee $\frac{1}{3}$	(D)	<u>70,000</u>	210,000				
			<u>800,000</u>				<u>800,000</u>

#### Cayley Ltd

Realisation: sale price			£				£
	(C)	800,000		Bank	(F)	200,000	
		<u>800,000</u>		Shares in Cayley Ltd	(F)	<u>600,000</u>	
						<u>800,000</u>	

#### Shares in Cayley Ltd

Cayley Ltd			£				£
	(F)	600,000		Capitals: Kay	(G)	400,000	
		<u>600,000</u>		Lee	(G)	<u>200,000</u>	
						<u>600,000</u>	

#### Capitals

		Kay £	Lee £			Kay £	Lee £
Shares in Cayley	(G)	400,000	200,000	Balances b/d		320,000	160,000
Bank	(G)	60,000	30,000	Profit on realisation	(D)	140,000	70,000
		<u>460,000</u>	<u>230,000</u>			<u>460,000</u>	<u>230,000</u>

#### Current Accounts

		Kay £	Lee £			Kay £	Lee £
Bank	(G)	30,000	40,000	Balances b/d		30,000	40,000

#### Bank

		£			£
Bank b/d		10,000	Creditors		50,000
Cayley Ltd	(F)	200,000	Capitals: Kay		60,000
			Lee		30,000
			Current accounts: Kay		30,000
			Lee		40,000
		<u>210,000</u>			<u>210,000</u>

**Note:** It would have been possible to transfer the balances of the current accounts to the capital accounts before settlement.

Assuming that Cayley values the buildings at £410,000 and the stock at £70,000, its balance sheet at 1 January 20X5 would appear as in (B) below. The items shown under (A) were the balances before the takeover.

Balance Sheet(s)				
	(A) Before	+	–	(B) After
	£	£	£	£
Goodwill		110,000		110,000
Buildings	500,000	410,000		910,000
Motor vehicles	250,000	150,000		400,000
Stock	280,000	70,000		350,000
Debtors	170,000	60,000		230,000
Bank	300,000		200,000	100,000
	<u>1,500,000</u>	<u>800,000</u>	<u>200,000</u>	<u>2,100,000</u>
Share capital (£1 shares)	1,000,000	600,000		1,600,000
Profit and loss	400,000			400,000
Creditors	100,000			100,000
	<u>1,500,000</u>	<u>600,000</u>		<u>2,100,000</u>

## 6.4 The takeover of one company by another

There are two methods by which one company may take over another:

- 1 Buying all the assets of the other company with cash, shares or debentures. The selling company may afterwards be wound up: the liquidators may distribute the purchasing company's shares and debentures among the shareholders of the selling company, or the shares and debentures of the buying company may be sold and the cash distributed instead.
- 2 Giving its own shares and debentures in exchange for the shares and debentures of the selling company's share and debenture holders.

The two methods are shown in Exhibit 6.6.

### Exhibit 6.6

The following are the balance sheets of three companies as at the same date.

Balance Sheets			
	R Ltd	S Ltd	T Ltd
	£	£	£
Buildings	130,000	–	10,000
Machinery	40,000	20,000	10,000
Stock	30,000	10,000	20,000
Debtors	20,000	10,000	30,000
Bank	10,000	20,000	30,000
	<u>230,000</u>	<u>60,000</u>	<u>100,000</u>
Share capital (£1 shares)	180,000	30,000	50,000
Profit and loss	20,000	10,000	40,000
Current liabilities	30,000	20,000	10,000
	<u>230,000</u>	<u>60,000</u>	<u>100,000</u>



R takes over S by exchanging with the shareholders of S two shares in R at a premium of 10 per cent for every share they hold in S.

R takes over T by buying all the assets of T, the purchase consideration being 120,000 £1 shares in R at a premium of 10 per cent, and R will pay off T's creditors. R values T's assets at buildings £20,000; machinery £6,000; stock £14,000; debtors £25,000; and the bank is £30,000, a total of £95,000.

R's deal with the shareholders of S means that R now has complete control of S Ltd, so that S Ltd becomes what is known as a subsidiary undertaking of R Ltd, and will be shown as an investment in R's balance sheet.

On the other hand, the deal with T has resulted in the ownership of the assets resting with R. These must therefore be added to R's assets in its own balance sheet. As R has given 120,000 £1 shares at a premium of 10 per cent plus taking over the responsibility for creditors £10,000, the total purchase consideration for the assets taken over is £120,000 + £12,000 (10 per cent of £120,000) + £10,000 = £142,000. Identifiable assets as already stated are valued at £95,000, therefore the goodwill is £142,000 – £95,000 = £47,000.

The distinction between the acquisition of the two going concerns can be seen to be a rather fine one. With S, the shares are taken over, the possession of these in turn giving rise to the ownership of the assets. In the books of R this is regarded as an investment. With T, the actual assets and liabilities are taken over so that the assets now directly belong to R. In the books of R this is therefore regarded as the acquisition of additional assets and liabilities and not as an investment (using the meaning of 'investment' which is used in the balance sheets of companies). The balance sheet of R Ltd therefore becomes:

R Ltd Balance Sheet				
	Before £		+ or – £	After £
Goodwill		+(T)	47,000	47,000
Buildings	130,000	+(T)	20,000	150,000
Machinery	40,000	+(T)	6,000	46,000
Investment in S at cost		+(S)	66,000	66,000
Stock	30,000	+(T)	14,000	44,000
Debtors	20,000	+(T)	25,000	45,000
Bank	<u>10,000</u>	+(T)	30,000	<u>40,000</u>
	230,000			438,000
Less Current liabilities	( <u>30,000</u> )	+(T)	10,000	( <u>40,000</u> )
	<u>200,000</u>			<u>398,000</u>
Share capital	180,000	+(S)	60,000	
		+(T)	120,000	= 360,000
Share premium		+(S)	6,000	
		+(T)	12,000	= 18,000
Profit and loss	<u>20,000</u>			<u>20,000</u>
	<u>200,000</u>			<u>398,000</u>

**No entry is necessary in the books of S Ltd, as it is merely the identity of the shareholders that has changed. This would be duly recorded in the register of members, but this is not really an integral part of the double entry accounting system.**

If, however, T Ltd is now liquidated, then a realisation account must be drawn up and the distribution of the shares (or cash if the shares are sold) to the shareholders of T Ltd must be shown. Such accounts would appear as follows:

**Books of T Ltd***Realisation*

	£		£
Book values of assets disposed of:		R Ltd: Total purchase consideration	
Buildings	10,000		142,000
Machinery	10,000		
Stock	20,000		
Debtors	30,000		
Bank	30,000		
Profit on realisation transferred to sundry shareholders	42,000		
	<u>142,000</u>		<u>142,000</u>

*Share Capital*

	£		£
Sundry shareholders	<u>50,000</u>	Balance b/d	<u>50,000</u>

*Profit and Loss*

	£		£
Sundry shareholders	<u>40,000</u>	Balance b/d	<u>40,000</u>

*Creditors*

	£		£
R Ltd – taken over	<u>10,000</u>	Balance b/d	<u>10,000</u>

*R Ltd*

	£		£
Realisation:		Creditors	10,000
Total consideration	142,000	Sundry shareholders: 120,000	
		£1 shares received at premium of 10 per cent	<u>132,000</u>
	<u>142,000</u>		<u>142,000</u>

*Sundry Shareholders*

	£		£
R Ltd: 120,000 £1 shares at premium of 10 per cent	132,000	Share capital	50,000
		Profit and loss	40,000
	<u>132,000</u>	Profit on realisation	<u>42,000</u>
			<u>132,000</u>

It can be seen that the items possessed by the sundry shareholders have been transferred to an account in their name. These are (a) the share capital which obviously belongs to them, (b) the credit balance on the profit and loss account built up by withholding cash dividends from the shareholders, and (c) the profit on realisation which they, as owners of the business, are entitled to take. As there were 50,000 shares in T Ltd, and 120,000 shares have been given by R Ltd, then each holder of 5 shares in T Ltd will now be given 12 shares in R Ltd to complete the liquidation of the company.

## 6.5 The exchange of debentures

Sometimes the debentures in the company taking over are to be given in exchange for the debentures of the company being taken over. This may be straightforward on the basis of £100 debentures

in company A in exchange for £100 debentures in company B. However, when the exchange is in terms of one or both sets of debentures being at a discount or at a premium, it becomes more complex. This form of exchange may occur because:

- 1 There is a desire to persuade the debenture holders in company B to give up their debentures but they need some form of inducement, such as letting them have A's debentures at a discount, even though they may well be worth their par value.
- 2 There may be a difference between the interest rates of the two debentures. For instance, a person with a £100 7 per cent debenture would not normally gladly part with it in exchange for a £100 6 per cent debenture in another company. The first debenture gives the investor £7 a year interest, the second one only £6 per year. Thus, the debenture in the second company may be issued at a discount so that holders who switch to it continue to receive £7 a year for each £100 they originally invested. As the amount of interest is only one factor – others include the certainty of the debenture holder regaining his/her money if the business had to close down – the precise terms of the exchange cannot be based merely on arithmetical calculations of interest rates, but it is one of the measures taken when negotiating the exchange of debentures and is the most obvious.

### Exhibit 6.7

- 1 D Ltd is to give the necessary debentures at a discount of 10 per cent required to redeem £9,000 debentures in J Ltd at a premium of 5 per cent. The problem here is to find exactly what amount of debentures must be given by D Ltd.

$$\begin{aligned}
 & \text{Total nominal value of debentures to be redeemed (exchanged)} \times \frac{\text{Redeemable value of each £100 debenture of J Ltd}}{\text{Issue value of each £100 debenture of D Ltd}} \\
 &= \text{Total nominal value of D Ltd to be issued} \\
 &= £9,000 \times \frac{105}{90} \\
 &= £10,500
 \end{aligned}$$

Thus, to satisfy the agreement, debentures of D Ltd of a total nominal value of £10,500 are issued at a discount of 10 per cent to the debenture holder of J Ltd.

- 2 H Ltd is to give the necessary debentures at par to redeem £5,000 debentures in M Ltd at a premium of 4 per cent.

$$£5,000 \times \frac{104}{100} = \text{Debentures of £5,200 nominal value are given by H Ltd at par}$$

Now, let's move on to a look at something that often happens when a company is first formed – profits or losses have been earned prior to incorporation.

## 6.6

### The treatment of profits (or losses) prior to incorporation

Quite frequently, companies are formed after the business has been in existence for some time and profits or losses have been earned. For example, it could be that two people enter into business and start trading with the intention of running the business as a limited company. However, it takes more than a few days to attend to all the necessary formalities before the company can be incorporated. The actual time taken depends on the speed with which the formation is pushed through and the resolution of any problems which arise.

When the company is incorporated, it may enter into a contract whereby it adopts all the transactions retrospectively to the date that the firm (i.e. with two people, it was a partnership) had started trading. This means that the company accepts all the benefits and disadvantages which have flowed from the transactions which have occurred. The example used was that of a new business; it could well have been an old, established business that was taken over from a date predating incorporation of the company.

Legally, a company cannot earn profits before it comes into existence (i.e. incorporated). Therefore, to decide what action to take, profits must be calculated. Any such profits are of a capital nature and must be transferred to a capital reserve account, normally titled *Pre-incorporation Profit Account* or *Profit Prior to Incorporation Account*. That this should be done is obvious if you realise that, even though the actual date from which the transactions have been adopted falls before the date of incorporation, the price at which the business was taken over was influenced by the values of the assets etc. at the date when the company was incorporated.

Let's consider an example. Suppose that Doolin and Kershaw start a business on 1 January 20X5 with £1,000 capital, and very shortly afterwards Davie and Parker become involved and the four of them form a company in which they will all become directors – Davie and Parker to start active work when the company is incorporated.

The company is incorporated on 1 May 20X5 and the original owners of the business, Doolin and Kershaw, are to be given shares in the new company to compensate them for handing over the business. If they know, not necessarily with precision, that the original £1,000 assets have grown to net assets of £6,000, then they would not part with the business to the company for £1,000. Ignoring goodwill, they would want £6,000 of shares. Conversely, if the net assets have shrunk to £400, would Davie and Parker be happy to see £1,000 of shares handed over? This means that the price at which the business is taken over is dependent on the expected value at the date of the company incorporation, and that value clearly includes profits or losses earned to that date.

Taking the case where net assets have increased to £6,000, the £5,000 difference is made up of profits. If these profits could be distributed as dividends, the capital payment of £6,000 in shares is being partly used for dividend purposes. This is inappropriate and is in direct contradiction to the normal accounting practice of keeping capital intact. The £5,000 profits must, therefore, be regarded as not being available for dividends. They are a capital reserve.

Although **pre-incorporation profit** cannot be regarded as free for use as dividends, any **pre-incorporation loss** can be used to restrict the dividends which could be paid out of the profits made after incorporation. This is an example of application of the prudence concept and, if the price paid on takeover was higher than was justified by the net worth of the business at that time, and it was discovered later that a pre-incorporation loss had been made, then the restriction of dividends leads to the capital lost being replaced by assets held back within the business. Alternatively, the amount of the pre-incorporation loss could be charged to a goodwill account, as this is also another way of stating that a higher price has been paid for the assets of the firm than is represented by the value of the tangible assets taken over.

It is possible for the profits up to the date of incorporation to be calculated separately from those earned after incorporation. However, the cost of doing so may not be worthwhile incurring when there is no legal requirement to do so. (This is invariably the case in examination questions.)

Therefore, when the financial statements for the full financial year are prepared, they will consist of profits pre- and post-incorporation. The financial statements must, therefore, be split to throw up the two sets of profit (or loss), so that distinction can be made between those profits usable, and those not usable, for dividend purposes. There is no hard-and-fast rule as to how this is done. Known facts must prevail and, where an arbitrary apportionment must be made, it should meet the test of common sense in the particular case. Exhibit 6.8 shows an attempt to determine the amount of pre- and post-incorporation profits.



**Exhibit 6.8**

Slack and King are partners. Their business was taken over as from 1 January 20X4 by Monk Ltd which is incorporated on 1 April 20X4. It was agreed that all profits made from 1 January 20X4 should belong to the company, and that Slack and King are entitled to interest on the purchase price from 1 January to the date of payment.

The purchase price was paid on 30 April 20X4, including £1,600 interest. A profit and loss account is drawn up for the year ended 31 December 20X4. This is shown as column (X). This is then split into pre-incorporation, shown as column (Y), and post-incorporation as column (Z). The methods used to apportion the particular items are shown after the profit and loss account, the letters (A) to (I) against the items being references to notes below the profit and loss account.

**These methods of apportionment must definitely *not* be used in all cases for similar expenses; they are only an indication of different methods of apportionment. The facts and the peculiarities of each business must be taken into account, and no method should be adopted simply because it was used before.**

Assume for this example that all calendar months are of equal length.

Monk Ltd							
Profit and Loss Account for the year ended 31 December 20X4							
		(X) Full year		(Y) Pre-incorporation		(Z) After	
		£	£	£	£	£	£
Gross profit	(A)		38,000		8,000		30,000
Less							
Partnership salaries	(B)	1,000		1,000			
Employees' remuneration	(C)	12,000		3,000		9,000	
General expenses	(C)	800		200		600	
Commission on sales	(D)	1,700		200		1,500	
Distribution expenses	(E)	1,900		400		1,500	
Bad debts	(F)	100		20		80	
Bank overdraft interest	(G)	200				200	
Directors' remuneration	(H)	5,000				5,000	
Directors' expenses	(H)	400				400	
Debenture interest	(H)	500				500	
Depreciation	(C)	1,000		250		750	
Interest paid to vendors	(I)	<u>1,600</u>		<u>1,200</u>		<u>400</u>	
			(26,200)		(6,270)		(19,930)
Net profit			<u>11,800</u>				
Transferred to capital reserves					<u>1,730</u>		
Carried down to the appropriation account							10,070

**Notes:**

- (A) For the three months to 31 March sales amounted to £40,000, and for the remaining nine months they were £150,000. Gross profit is at a uniform rate of 20 per cent of selling price throughout the year. Therefore the gross profit is apportioned (Y) 20 per cent of £40,000 = £8,000, and (Z) 20 per cent of £150,000 = £30,000.
- (B) The partnership salaries of the vendors, Slack and King, obviously belong to (Y), because that is the period of the partnership.
- (C) These expenses, in this particular case, have accrued evenly throughout the year and are therefore split on the time basis of (Y) three-twelfths, (Z) nine-twelfths.
- (D) Commission to the salespeople was paid at the rate of  $\frac{1}{2}$  per cent on sales up to 31 March, and 1 per cent thereafter. The commission figure is split:

$$(Y) \frac{1}{2} \text{ per cent of } £40,000 = 200$$

$$(Z) 1 \text{ per cent of } £150,000 = 1,500$$

$$\underline{1,700}$$

(E) In this particular case (but not always true in every case) the distribution expenses have varied directly with the value of sales. They are therefore split:

$$(Y) \frac{Y \text{ sales}}{\text{Total sales}} \times \text{Expenses} = \frac{40,000}{190,000} \times £1,900 = \frac{4}{19} \times £1,900 = £400$$

$$(Z) \frac{Z \text{ sales}}{\text{Total sales}} \times \text{Expenses} = \frac{150,000}{190,000} \times £1,900 = \frac{15}{19} \times £1,900 = £1,500$$

(F) The bad debts were two in number:

(i) in respect of a sale in January, the debtor dying penniless in March, £20;

(ii) in respect of a sale in June, the debtor being declared bankrupt in December, £80.

(G) The bank account was never overdrawn until June, so that the interest charged must be for period (Z).

(H) Only in companies are such expenses as directors' salaries, directors' expenses and debenture interest to be found. These must naturally be shown in period (Z).

(I) The interest paid to the vendors was due to the fact that the company was receiving all the benefits from 1 January but did not in fact pay any cash for the business until 30 April. This is therefore in effect loan interest which should be spread over the period it was borrowed, i.e. three months to (Y) and 1 month to (Z).

## Learning outcomes

You should now have learnt:

- 1 Why goodwill may arise when a business is taken over.
- 2 The difference between goodwill and negative goodwill.
- 3 The basic accounting entries are the same whether a limited company takes over a sole trader or a partnership.
- 4 Limited companies may take over other limited companies either:
  - (a) by buying all the assets of the other company, or
  - (b) by giving its own shares and debentures in exchange for the shares and debentures of the company being taken over.
- 5 How to record pre-incorporation losses and profits.
- 6 That pre-incorporation profits are not available for distribution.

## Answer to activity

**6.1** Apart from the obvious difference that may arise between the net book value of an individual asset and its true worth (i.e. its fair value), such as in the example of the property given in the text, when a business is sold, the purchaser may have to pay extra to cover the value of intangible assets that do not appear in the balance sheet. Examples would include the reputation and customer base of the business being purchased, neither of which can appear in a balance sheet.

It is also possible that less may be paid than the net worth of a business because some assets may be considered as not being worth the amounts shown in the financial statements – it may be considered, for example, that debtors are likely to be overvalued or that individual assets are worth less to the purchaser than the values shown in the financial statements.

Of course, buyers generally try to pay as little as possible for a business. If a seller is very keen to sell, a price may be agreed that is below the net worth as shown in the balance sheet, even though that value is correct. It all depends on how the transaction is negotiated by the purchaser and the seller.

## Review questions

**6.1** Chess Ltd was incorporated on 1 September 20X4 and took over the business of Red and Green on 1 June 20X4. It was agreed that all profits made from 1 June should belong to the company and that the vendors should be entitled to interest on the purchase price from 1 June to the date of payment. The purchase price was paid on 31 October 20X4 including £3,300 interest.

The following is the profit and loss account for the year to 31 May 20X5:

	£	£
Gross profit		56,000
Less: Expenses		
Salaries of Red and Green	3,390	
Wages and general expenses	17,280	
Rent	1,720	
Distribution expenses	3,360	
Commission on sales	1,400	
Bad debts	628	
Interest paid to vendors	3,300	
Directors' remuneration	8,000	
Directors' expenses	1,030	
Depreciation		
Vans	3,800	
Machinery	<u>1,150</u>	
	4,950	
Bank interest	<u>336</u>	(45,394)
Net profit		<u>10,606</u>

You are given the following information:

- Sales amounted to £40,000 for the three months to 31 August 20X4 and £100,000 for the nine months to 31 May 20X5. Gross profit is at a uniform rate of 40 per cent of selling price throughout the year, and commission at a rate of 1 per cent is paid on all sales.
- Salaries of £3,390 were paid to the partners for their assistance in running the business up to 31 August 20X4.
- The bad debts written off are:
  - a debt of £208 taken over from the vendors;
  - a debt of £420 in respect of goods sold in November 20X4.
- On 1 June 20X4, two vans were bought for £14,000 and machinery for £10,000. On 1 August 20X4 another van was bought for £6,000 and on 1 March 20X5, another machine was added for £6,000. Depreciation has been written off vans at 20 per cent per annum, and machinery 10 per cent per annum. Depreciation is written off for each month in which an asset is owned.
- Wages and general expenses and rent all accrued at an even rate throughout the year.
- The bank granted an overdraft facility in September 20X4.

Assuming all calendar months are of equal length:

- set out the profit and loss account in columnar form, so as to distinguish between the period prior to the company's incorporation and the period after incorporation;
- state how you would deal with the profit prior to incorporation;
- state how you would deal with the results prior to incorporation if they had turned out to be a net loss.

**6.2** On 30 June 20X4 Smith and Sons Ltd acquired all the assets, except the investments, of Firefly Ltd.

The following are the summaries of the profit and loss account of Firefly Ltd for the years ending 30 June 20X2, 20X3 and 20X4:

	20X2	20X3	20X4		20X2	20X3	20X4
Motor expenses	9,400	9,900	10,300	Gross profit	164,800	178,200	177,400
Management salaries	32,000	35,000	36,000	Investment income	2,100	2,900	4,200
Depreciation of plant and machinery	12,000	9,600	7,680	Rents received	7,800	3,300	–
Overdraft interest	440	1,120	1,360	Profit on sale of property	–	23,200	–
Wrapping expenses	5,010	5,730	6,120				
Preliminary expenses written off	–	4,400	–				
Net profit	<u>115,850</u>	<u>141,850</u>	<u>120,140</u>				
	<u>174,700</u>	<u>207,600</u>	<u>181,600</u>		<u>174,700</u>	<u>207,600</u>	<u>181,600</u>

The purchase price is to be the amount on which an estimated maintainable profit would represent a return of 20 per cent per annum.

The maintainable profit is to be taken as the average of the profits of the three years 20X2, 20X3 and 20X4, after making any necessary adjustments.

You are given the following information:

- The cost of the plant and machinery was £60,000. It has been agreed that depreciation should have been written off at the rate of 10 per cent per annum using the straight line method.
- A new type of wrapping material means that wrapping expenses will be halved in future.
- By switching to a contract supply basis on motor fuel and motor repairs, it is estimated that motor expenses will fall by 25 per cent in future.
- Stock treated as valueless at 30 June 20X1 was sold for £4,700 in 20X3.
- The working capital of the new company is sound and it is felt that there will be no need for a bank overdraft in the foreseeable future.
- Management salaries have been inadequate and will have to be increased by £35,000 a year in future.

**You are required to** set out your calculation of the purchase price. All workings must be shown. In fact, your managing director, who is not an accountant, should be able to decipher how the price was calculated.

**6.3** CJK Ltd was incorporated on 15 December 20X9 with an authorised capital of 200,000 ordinary shares of £0.20 each to acquire as at 31 December 20X9 the business of CK, a sole trader, and RP Ltd, a company.

From the following information you are required to prepare:

- the realisation and capital accounts in the books of CK and RP Ltd showing the winding up of these two concerns;
- the journal entries to open the books of CJK Ltd, including cash transactions and the raising of finance;
- the balance sheet of CJK Ltd after the transactions have been completed.

The balance sheet of CK as at 31 December 20X9 is as follows:

Balance Sheet	
	£
Freehold premises	8,000
Plant	4,000
Stock	2,000
Debtors	5,000
Cash	200
	<u>19,200</u>
Capital	16,000
Creditors	3,200
	<u>19,200</u>



The assets (excluding cash) and the liabilities were taken over at the following values: freehold premises £10,000, plant £3,500, stock £2,000, debtors £5,000 less a bad debts provision of £300, goodwill £7,000, creditors £3,200 less a discount provision of £150. The purchase consideration, based on these values, was settled by the issue of shares at par.

The balance sheet of RP Ltd as at 31 December 20X9 is as follows:

#### Balance Sheet

	£
Freehold premises	4,500
Plant	2,000
Stock	1,600
Debtors	<u>3,400</u>
	<u>11,500</u>
Share capital: 10,000 shares at £0.40 each	4,000
Revenue surplus	2,500
Creditors	1,500
Bank overdraft	<u>3,500</u>
	<u>11,500</u>

The assets and liabilities were taken over at book value with the exception of the freehold premises which were revalued at £5,500. The purchase consideration was a cash payment of £1 and three shares in CJK Ltd at par in exchange for every two shares in RP Ltd.

Additional working capital and the funds required to complete the purchase of RP Ltd were provided by the issue for cash of:

- (i) 10,000 shares at a premium of £0.30 per share;
- (ii) £8,000 7 per cent debenture stock at 98.

The expenses of incorporating CJK Ltd were paid, amounting to £1,200.

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**6.4A** The balance sheet of Hubble Ltd as at 31 May 20X0 is shown below.

#### Hubble Ltd

	£	£
<b>Fixed assets</b>		
Freehold premises at cost		375,000
Plant and machinery at cost		
Less Depreciation £48,765		101,235
Motor vehicles at cost		
Less Depreciation £1,695		<u>6,775</u>
<b>Current assets</b>		<u>483,010</u>
Stock-in-trade	102,550	
Debtors	96,340	
Cash in hand	<u>105</u>	
		<u>198,995</u>
		<u>682,005</u>
Authorised share capital		
650,000 ordinary shares of £1 each		<u>650,000</u>
Issued share capital		
400,000 ordinary shares of £1 each fully paid		400,000
Profit and loss account		<u>180,630</u>
<b>Current liabilities</b>		<u>580,630</u>
Trade creditors	63,200	
Bank overdraft	<u>38,175</u>	
		<u>101,375</u>
		<u>682,005</u>

Hubble Ltd agreed to purchase at this date the freehold premises, plant and machinery and stock of A Bubble at agreed valuations of £100,000, £10,000 and £55,000, respectively. The purchase price was to be fully settled by the issue to Bubble of 120,000 ordinary shares of £1 each in Hubble Ltd, and a cash payment to Bubble of £25,000. Bubble was to collect his debts and to pay his creditors.

Hubble Ltd sold one of its own premises prior to taking over Bubble for £75,000 (cost £55,000) and revalued the remainder at £400,000 (excluding those acquired from Bubble).

**You are required to:**

- show the journal entries, including cash items, in the books of Hubble Ltd to give effect to the above transactions; and
- show the balance sheet of Hubble Ltd after completing them.

*(Association of Chartered Certified Accountants)*

**6.5A** From the following information you are required to prepare a statement apportioning the unappropriated profit between the pre-incorporation and post-incorporation periods, showing the basis of apportionment:

VU Limited was incorporated on 1 July 20X9 with an authorised share capital of 60,000 ordinary shares of £1 each, to take over the business of L and Sons as from 1 April 20X9.

The purchase consideration was agreed at £50,000 for the net tangible assets taken over, plus a further £6,000 for goodwill.

Payment was satisfied by the issue of £30,000 8 per cent debentures and 26,000 ordinary shares both at par, on 1 August 20X9. Interest at 10 per cent per annum on the purchase consideration was paid up to this date.

The company raised a further £20,000 on 1 August 20X9 by the issue of ordinary shares at a premium of £0.25 per share.

The abridged profit and loss account for the year to 31 March 20X0 was as follows:

	£	£
Sales:		
1 April 20X9 to 30 June 20X9	30,000	
1 July 20X9 to 31 March 19Y0	<u>95,000</u>	125,000
Cost of sales for the year	80,000	
Depreciation	2,220	
Directors' fees	500	
Administration salaries and expenses	8,840	
Sales commission	4,375	
Goodwill written off	1,000	
Interest on purchase consideration, gross	1,867	
Distribution costs (60 per cent variable)	6,250	
Preliminary expenses written off	1,650	
Debenture interest, gross	1,600	
Proposed dividend on ordinary shares	<u>7,560</u>	
		<u>115,862</u>
Unappropriated profit carried forward		<u>9,138</u>

The company sells one product only, of which the unit selling price has remained constant during the year, but due to improved buying the unit cost of sales was reduced by 10 per cent in the post-incorporation period as compared with the pre-incorporation period.

Taxation is to be ignored.

*(Chartered Institute of Management Accountants (part (a) of question only))*

**6.6A** Rowlock Ltd was incorporated on 1 October 20X8 to acquire Rowlock's mail order business, with effect from 1 June 20X8.



The purchase consideration was agreed at £35,000 to be satisfied by the issue on 1 December 20X8 to Rowlock or his nominee of 20,000 ordinary shares of £1 each, fully paid, and £15,000 7 per cent debentures.

The entries relating to the transfer were not made in the books which were carried on without a break until 31 May 20X9.

On 31 May 20X9 the trial balance extracted from the books is:

	£	£
Sales		52,185
Purchases	38,829	
Wrapping	840	
Postage	441	
Warehouse rent and rates	921	
Packing expenses	1,890	
Office expenses	627	
Stock on 31 May 20X8	5,261	
Director's salary	1,000	
Debenture interest (gross)	525	
Fixed assets	25,000	
Current assets (other than stock)	9,745	
Current liabilities		4,162
Formation expenses	218	
Capital account – Wysocka, 31 May 20X8		29,450
Drawings account – Wysocka, 31 May 20X8	500	
	<u>85,797</u>	<u>85,797</u>

You also ascertain the following:

- 1 Stock on 31 May 20X9 amounted to £4,946.
- 2 The average monthly sales for June, July and August were one-half of those for the remaining months of the year. The gross profit margin was constant throughout the year.
- 3 Wrapping, postage and packing expenses varied in direct proportion to sales, whilst office expenses were constant each month.
- 4 Formation expenses are to be written off.

**You are required to** prepare the trading and profit and loss account for the year ended 31 May 20X9 apportioned between the periods before and after incorporation, and the balance sheet as at that date.

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**You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)**

# Taxation in company financial statements

## Learning objectives

After you have studied this chapter, you should be able to:

- explain why profit per the profit and loss account is normally different from assessable profit for corporation tax calculations
- explain how income tax on interest affects companies and individuals
- describe how the 'imputation system' operates
- describe how and why deferred tax is relevant to capital allowances

## Introduction

In this chapter, you'll learn that in the UK depreciation is not allowed as an expense for tax purposes and that something called a 'capital allowance' is granted instead. You'll also learn that the result of replacing depreciation with capital allowances when calculating tax is that taxable profit is very rarely the same amount as the figure shown for net profit in the financial statements. You'll learn how to apportion taxable profit across two tax periods, when corporation tax is payable, and the differences between the UK tax system for companies compared with the one that operates for sole traders and partnerships. Finally, you will learn about deferred tax and how it is calculated and applied to avoid financial statements being misleading in the way they present future tax liabilities in the balance sheet.

## 7.1 Background

This chapter is concerned with the entries made in the financial statements of companies in respect of taxation. It is not concerned with the actual calculation of the taxes as tax legislation is extremely complex and contains too many exceptions to the general rules applicable to companies for us to attempt to cover the entire subject in this book. It should be appreciated, therefore, that although the rules described in this chapter apply to the great majority of UK companies, there are many for which more complex tax rules will apply.

Taxation that affects UK companies can be split between:

- 1 Value added tax (VAT). This was covered in *Business Accounting 1*.
- 2 Direct taxes, payable to the Inland Revenue, the government department responsible for the calculation and collection of the taxes. For a company, the relevant taxes are corporation tax and income tax. FRS 16: *Current tax* deals with the treatment of taxation in company financial statements and will be adhered to in this chapter.



## 7.2 Limited companies: corporation tax and income tax

The principal tax paid by limited companies is **corporation tax**. Legally, it is an appropriation of profits, *not* an expense. It is shown in the profit and loss appropriation account, i.e. after the calculation of net profit.

A company's profits are assessable to corporation tax. But, corporation tax is assessable on the profit calculated *after certain adjustments have been made* to the net profit. These adjustments are not made in the financial statements. They are done quite separately from the drafting of financial statements and are not entered in the accounting books of the company.

Let's look at an example of one of these adjustments. Suppose that K Ltd has the following net profit:

### K Ltd Profit and Loss Account for the year ended 31 March 20X8

	£	£
Gross profit		100,000
Less: General expenses	25,000	
Depreciation of machinery	<u>20,000</u>	
		( 45,000)
Net profit		<u>55,000</u>

The depreciation provision for machinery is the accounting figure used for the financial statements. It must be reversed when calculating the taxable profit and replaced by another deduction, **capital allowances**. These are the Inland Revenue's equivalent of depreciation and are calculated by rules which usually vary at one point or another from the methods applied by companies in determining their depreciation provisions. As a result, taxable profit assessed in any year is normally not the same as the net profit for that year as shown in the profit and loss account.

### Activity 7.1

Why do you think the rules for capital allowances are different from the rules for depreciation?

In the case of K Ltd, assume that the capital allowances amount to £27,000 and that the rate of corporation tax is 40 per cent on assessable profits. The calculation of the corporation tax liability would be:

	£
Net profit per the financial statements	55,000
Add Depreciation provision not allowed as a deduction for corporation tax purposes	<u>20,000</u>
	75,000
Less Capital allowances	(27,000)
Adjusted profits assessable to corporation tax	<u>48,000</u>

At a corporation tax rate of 40 per cent, the corporation tax liability will be  $£48,000 \times 40$  per cent = £19,200.

### Activity 7.2

In this example, taxable profits were higher than the net profit. Yet, over the life of a fixed asset, the amount of profit assessed in total for tax will always equal the total net profit for that period. Why?

As you might imagine, it is usually impossible to calculate the corporation tax payable by a company from its net profit. In fact, in addition to depreciation, other items in the financial statements often also need to be adjusted to find the assessable profits for corporation tax purposes.

### 7.3 The rate of corporation tax

The rate of corporation tax covering the period from 1 April to 31 March of the following year is fixed by the Chancellor of the Exchequer in the Budget, presented to Parliament each year. This rate is applied to the assessable profits of companies earned during this period. A company which has a financial year end other than 31 March spans two tax years, and apports its taxable profits across the two periods.

Let's look at an example of this in Exhibit 7.1.

#### Exhibit 7.1

Company T Ltd: adjusted profits for the year ended 31 December 20X8 = £160,000.

*Rates of corporation tax:*

For the tax year ended 31.3.20X8, 45 per cent.

For the tax year ended 31.3.20X9, 40 per cent.

3 months' profit 1.1.20X8 to 31.3.20X8	£
3/12 months × £160,000 = £40,000 × 45 per cent	18,000
9 months' profit 1.4.20X8 to 31.12.20X8	
9/12 months × £160,000 = £120,000 × 40 per cent	<u>48,000</u>
Corporation tax payable on adjusted profits for the year ended 31 December 20X8	<u>66,000</u>

### 7.4 Corporation tax – when payable

All companies have a payment date of 9 months after the end of their accounting period. For the rest of this chapter, although companies with relatively small profits can pay tax at a lower rate than companies with greater profits, unless mentioned otherwise corporation tax will be assumed to be 40 per cent.

### 7.5 Advance corporation tax (ACT)

In the past, when a company paid a dividend, a sum equal to a fraction of that figure had to be paid to the Inland Revenue as *advance corporation tax* (ACT). When a company was due to pay its corporation tax bill, it adjusted the amount it sent to the Inland Revenue by the amount of ACT it had paid or reclaimed during the relevant period. FRS 16: *Current tax* changed the rules relating to inclusion of dividends received to require them to be shown in the financial statements net of any associated tax credit. ACT was repealed with effect from 1999 and is not included in any of the examples or questions in this book.

### 7.6 Income tax

You've just learnt that companies do not pay income tax. They pay corporation tax. In the case of a sole trader, income tax is not directly connected with the business, as the individual *not* the business is liable to pay tax on the profits earned. Calculation of the tax due depends on many factors including, for example, whether the sole trader has other taxable income. The income tax paid by a sole trader should be treated as drawings if paid from the business bank account.

**Activity  
7.3**

If a sole trader has the same net profit each year as is earned by a small company, all other things being equal, which business will show the greater accumulated profits if

- (a) the sole trader pays income tax out of the business bank account;
- (b) the sole trader pays income tax out of a personal bank account and does not draw any extra funds out of the business to cover the payment.

Why are these two answers different?

The income tax charged upon a partnership is also subject to the personal situation of the partners. The actual apportionment of the tax between the partners must be performed by someone who has access to the personal tax computations. It is *not* apportioned in the partners' profit-sharing ratios but on the basis of how much income tax each partner was required to pay. When the apportionment has been made, each partner should have the relevant amount debited to his drawings account. Remember, neither sole traders nor partnerships are liable to corporation tax.

In contrast, income tax does come into the financial statements of some companies. When a company pays charges such as debenture interest or royalties, it deducts income tax from the amount paid to the debenture holder or royalty owner. This figure of income tax is then payable by the company to the Inland Revenue. In effect, the company is acting as a tax collector on behalf of the Inland Revenue, similar to the position a company is in regarding VAT.

Let's look at an example. Suppose a company has a thousand different debenture holders. It is far easier for the Inland Revenue if the company pays only the net amount (i.e. the amount of debenture interest less income tax) due to each debenture holder and then pays the income tax deducted, in one figure, to the Inland Revenue. This saves the Inland Revenue having to trace a thousand debenture holders and then collect the money from them. It obviously cuts down on the bad debts that the Inland Revenue might suffer, and makes it more difficult to evade the payment of income tax, plus it makes it cheaper for the Inland Revenue to administer the system. This system is similar to the way PAYE on wages or salaries is operated, something you learnt about in *Business Accounting 1*.

*For clarity, throughout the rest of this chapter it will be assumed that the basic rate of income tax is 25 per cent.* The real rate will obviously differ from time to time. In addition, when someone has a relatively high or low income, the rate of income tax they pay may be higher or lower than 25 per cent. However, even though individual debenture holders may have to pay income tax at higher rates, or indeed pay lower rates or no income tax at all, companies deduct income tax at the basic rate.

Thus, if a company has issued £100,000 of 8 per cent debentures, cheques amounting to a total of £6,000 (8 per cent of £100,000 = £8,000 less 25 per cent income tax, £2,000 = £6,000) will be paid to the debenture holders. A cheque for £2,000 will then be paid to the Inland Revenue by the company.

Let's consider some possible scenarios relating to this company's debenture holders (Exhibit 7.2).

**Exhibit 7.2**

If debenture holder AB pays income tax at the rate of 25 per cent, and he received £75 net (i.e. £100 gross less income tax £25), on his debenture of £1,250, then he has already suffered his rightful income tax by deduction at source. He will not get a further bill from the Inland Revenue for £25 tax. The company has already paid the £25 income tax he owed as part of the total income tax cheque it paid of £2,000.

On the other hand, debenture holder CD is not liable to income tax because his income is low. He also has a debenture of £1,250 and so also receives a cheque for interest of £75. As he is not

liable to income tax, but £25 of his money has been included in the total cheque paid by the company to the Inland Revenue of £2,000, he will be able to claim a refund of £25 from the Inland Revenue. Such a claim is made direct to the Inland Revenue, not to the company.

A third debenture holder EF pays tax at a rate of 40 per cent on his income. If he also has a debenture of £1,250, the company will pay a cheque to him of £75. But, he is really liable to pay tax of £50, not £25. As £25 income tax has been taken from him and handed over by the company in the total cheque of £2,000 income tax paid to the Inland Revenue, the Inland Revenue will send an extra demand to him for income tax of £25. Once again, the company has nothing to do with this extra demand.

## 7.7 Income tax on interest

Of course, a company may well have bought debentures or may own royalties, for example, in another company. This may mean that the company not only pays charges, such as debenture interest, but also receives similar items from other companies. The company will receive such items net after income tax has been deducted. When the company both receives and pays such items, it may set off the tax already suffered by it from such interest etc. received against the tax collected by it from its own charges, and pay the resultant net figure of income tax to the Inland Revenue. Again, this is similar to the treatment of VAT.

The figures of charges to be shown as being paid or received by the company in the company's own profit and loss account are the gross charges, i.e. the same as they would have been if income tax had never been invented. Exhibit 7.3 illustrates this more clearly.

### Exhibit 7.3

RST Ltd has 7 per cent debentures amounting to £100,000 and has bought a £40,000 debenture of 10 per cent in a private company, XYZ Ltd. During the year, cheques amounting to £5,250 (£7,000 less 25 per cent) have been paid to debenture holders, and a cheque for £3,000 (£4,000 less 25 per cent) has been received from XYZ Ltd. Instead of paying over the £1,750 income tax deducted on payment of debenture interest, RST Ltd waits until the cheque is received from XYZ Ltd and then pays a cheque for £750 (£1,750 collected less £1,000 already suffered by deduction by XYZ Ltd) to the Inland Revenue in settlement.

#### Debenture Interest Payable

	£		£
Cash	5,250	Profit and loss	7,000
Income tax	<u>1,750</u>		
	<u>7,000</u>		<u>7,000</u>

#### Debenture Interest Receivable

	£		£
Profit and loss	4,000	Cash	3,000
	<u>4,000</u>	Income tax	<u>1,000</u>
			<u>4,000</u>

#### Income Tax

	£		£
Unquoted investment income	1,000	Debenture interest	1,750
Cash	<u>750</u>		
	<u>1,750</u>		<u>1,750</u>

It may well have been the case that although the income tax had been deducted at source from both the payment out of the company and the amount received, no cash has been paid specifically to the Inland Revenue by the company by the balance sheet date. In this case, the balance of £750 owing to the Inland Revenue will be carried down as a credit balance and will be shown under current liabilities in the balance sheet.

## 7.8 Franked payments and franked investment income

When a dividend is paid by a company, this is done without any specific deduction of tax of any kind from the dividend payment. Previously, when a company paid a dividend, it also incurred a liability to pay ACT – see Section 7.5. The recipient received the dividend plus a tax credit, equal to the ACT, which could then be set against the recipient's income tax liability. When the dividend was paid to another company, the total of the dividend paid plus the tax credit was known as the *franked payment*. The total of the dividend received plus the tax credit was called *franked investment income*. With the repeal of ACT in 1999, these two terms appear unlikely to continue to be used.

## 7.9 IAS 12 (Income taxes) and current tax

The international accounting standard relevant to this topic is IAS 12. It differs from FRS 16 by requiring:

- current tax to be shown separately on the balance sheet;
- tax on items charged or credited to equity to be treated in the same way;
- tax on discontinued operations to be disclosed.

## 7.10 Deferred taxation

It was pointed out earlier in the chapter that *profits per the financial statements* and *profits on which tax is payable* are often quite different from each other. The main reasons for this are as follows:

- 1 The figure of depreciation shown in the profit and loss account may be far different from the Inland Revenue's figure for 'capital allowances', which is *their* way of calculating allowances for depreciation.
- 2 Some items of expense charged in the profit and loss account will not be allowed by the Inland Revenue as expenses. Examples are political donations, fines for illegal acts and expenses for entertaining UK customers.

### Timing differences

In the case of capital allowances under (1) above, as you confirmed in Activity 7.2, the amount of 'depreciation' charged for an asset over the years will eventually equal the amount allowed by the Inland Revenue as 'capital allowances'. Where the difference lies is in the periods when these items will be taken into account.

For instance, take an asset which cost £4,800 and will be sold after three years for £2,025. The depreciation rate is  $33\frac{1}{3}$  per cent straight line. Inland Revenue capital allowances are 25 per cent reducing balance.

Years ended 5 April*	20X2	20X3	20X4	Overall
	£	£	£	£
Depreciation	925	925	925	2,775
Capital allowances	<u>1,200</u>	<u>900</u>	<u>675</u>	<u>2,775</u>
Timing differences	<u>+275</u>	<u>-25</u>	<u>-250</u>	<u>nil</u>

\*The Inland Revenue tax year actually ends on 5 April, not 31 March, though 31 March is used for companies.

#### Activity 7.4

Why do you think the depreciation is £925 per year?

Thus, over the economic life of the asset, the same amount was deducted from profit for depreciation as was allowed as a deduction in the form of capital allowances.

What about retained profits, are they the same too? If profits for each year after depreciation were, instead, £1,000:

Years ended 5 April	20X2	20X3	20X4	Overall
	£	£	£	£
Profits after depreciation	1,000	1,000	1,000	3,000
Profits for tax purposes	<u>725</u>	<u>1,025</u>	<u>1,250</u>	<u>3,000</u>
Differences	<u>-275</u>	<u>+25</u>	<u>+250</u>	<u>nil</u>

As you can see, profits have in fact remained the same overall at £1,000. It is the difference in the timing of the deduction of capital allowances compared to that for depreciation which causes there to be different taxable profit figures each year compared to the net profit figures. These are known as 'timing differences'. Taking the point of view that profits of £1,000 per year give a more sensible picture than the £725, £1,025 and £1,250 per the Inland Revenue calculations, the company's way of depreciating is probably more appropriate for individual companies than the Inland Revenue's method which does not vary between companies.

You may well be wondering if it matters what amount is deducted for depreciation. Analysts and potential investors and shareholders themselves place a great reliance on something called 'earnings per share after tax'. Suppose that corporation tax was 40 per cent for each of the three years and that there were 1 million shares. This would give the following figures:

*Tax based on net profit, i.e. the company's calculations:*

	20X2	20X3	20X4
	£000	£000	£000
Profit per financial statements before taxation	1,000	1,000	1,000
Less Corporation tax (40%)	( 400)	( 400)	( 400)
Profit after tax	<u>600</u>	<u>600</u>	<u>600</u>
Earnings per share = Profit after tax ÷ 1 million =	60p	60p	60p

*Tax based on Inland Revenue calculations:*

	20X2	20X3	20X4
	£000	£000	£000
Profit per financial statements before tax	1,000	1,000	1,000
Less Corporation tax:			
40% of £725	( 290)		
40% of £1,025		( 410)	
40% of £1,250			( 500)
Profit after tax	<u>710</u>	<u>590</u>	<u>500</u>
Earnings per share = Profit after tax ÷ 1 million =	71p	59p	50p

In truth, all of the years have been equally profitable – this is shown by the company's calculation of 60p earnings per share each year. On the other hand, if no adjustment is made, the

financial statements when based on actual tax paid would show 71p, 59p and 50p. This could confuse shareholders and would-be shareholders.

In order not to distort the picture given by financial statements, the concept of deferred taxation was brought in by accountants. There have been three UK accounting standards on this topic. The latest, FRS 19: *Deferred tax*, was issued in December 2000.

FRS 19 requires that deferred tax is provided on timing differences relating to:

- capital allowances and depreciation;
- accruals for pension costs and other post-retirement benefits;
- the elimination of unrealised intragroup profits;
- unrelieved tax losses;
- annual revaluations of assets where changes in fair value are taken to the profit and loss account;
- other short-term timing differences.

The double entry is as follows:

- <sup>1</sup> In the years when taxation is lower than it would be on comparable accounting profits e.g. £40 on £200 net profit instead of £80:

*Dr* Profit and loss appropriation account  
*Cr* Deferred taxation account

with the amount of taxation understated.

Capital allowances etc. have reduced taxable profit this year but at some point in the future, the reverse will occur.

- 2 In the years when taxation is higher than it would be on comparable accounting profits e.g. £100 on £200 net profit instead of £80:

*Dr* Deferred taxation account  
*Cr* Profit and loss appropriation account

with the amount of taxation overstated.

By making these adjustments, a ‘fair’ amount of tax has either been set aside or paid each year. As a result, when the timing differences reverse, the retained profits will neither suddenly fall nor suddenly rise.

Let's now look at how the profit and loss appropriation account and deferred taxation account would have been drawn up in the last example. We shall use the wording which applies to published company financial statements. As a result, instead of 'Profit per financial statements before taxation', we shall use 'Profit on ordinary activities before taxation'.

## Exhibit 7.4

### Profit and Loss Appropriation Account for the years ended 5 April

	20X2		20X3		20X4	
	£000	£000	£000	£000	£000	£000
Profit on ordinary activities before taxation		1,000		1,000		1,000
Tax on profit on ordinary activities:						
Corporation tax	290		410		500	
Deferred taxation	<u>110</u>	( <u>400</u> )	( <u>10</u> )	( <u>400</u> )	( <u>100</u> )	( <u>400</u> )
Profit on ordinary activities after taxation		<u>600</u>		<u>600</u>		<u>600</u>

For stakeholders, such as shareholders, stock exchange analysts, and would-be shareholders, the profit after taxation figures on which earnings per share (EPS) would be calculated is £600,000 in each of the three years. The timing difference distortion has thus been eliminated by inclusion of the deferred tax adjustments.

Assuming that corporation tax is payable on 1 January following each accounting year end, the ledger accounts for corporation tax and deferred tax would be as follows:

Corporation Tax							
20X2			£000	20X2	£000		
Apr	5	Balance c/d	<u>290</u>	Apr	5	Profit and loss appropriation	<u>290</u>
			<u>290</u>				<u>290</u>
20X3				20X2			
Jan	1	Bank	290	Apr	6	Balance b/d	290
				20X3			
Apr	5	Balance c/d	<u>410</u>	Apr	5	Profit and loss appropriation	<u>410</u>
			<u>700</u>				<u>700</u>
20X4				20X3			
Jan	1	Bank	410	Apr	6	Balance b/d	410
				20X4			
Apr	5	Balance c/d	<u>500</u>	Apr	5	Profit and loss appropriation	<u>500</u>
			<u>910</u>				<u>910</u>
				20X4			
				Apr	6	Balance b/d	500
Deferred Taxation							
20X2			£000	20X2			£000
Apr	5	Balance c/d	<u>110</u>	Apr	5	Profit and loss appropriation	<u>110</u>
			<u>110</u>				<u>110</u>
20X3				20X2			
Apr	5	Profit and loss appropriation	10	Apr	6	Balance b/d	110
Apr	5	Balance c/d	<u>100</u>				<u>110</u>
			<u>110</u>				<u>110</u>
20X4				20X3			
Apr	5	Profit and loss appropriation	<u>100</u>	Apr	6	Balance b/d	<u>100</u>
			<u>100</u>				<u>100</u>
The balance sheets would appear:							
				20X2	20X3	20X4	
Creditors: amounts falling due within one year				£000	£000	£000	
Corporation tax				290	410	500	
Provisions for liabilities and charges							
Deferred taxation				110	100	–	

## Permanent differences

No adjustments are made to the accounting profit for differences between it and the taxable profit that arise because of non-tax-deductible items, such as political donations, and some entertaining expenses.



### A fully worked example

Exhibit 7.5 shows the ledger accounts in which tax will be involved for the first year of a new company, Harlow Ltd. Exhibit 7.6 shows the second year of that company. **This should help make your understanding of this topic clearer – to consider just one year very often leaves many unanswered questions.**

#### Exhibit 7.5

Harlow Ltd has just finished its first year of trading on 31 December 20X4. Corporation tax throughout was 35 per cent, and income tax was 25 per cent. You are given the following information:

- (A) Net trading profit for the year was £165,000, before adjustment for debenture interest.
- (B) Debenture interest (net) of £12,000 was paid on 31 December 20X4 and (C) the income tax deducted was paid on the same date.
- (D) An ordinary interim dividend of 10 per cent on the 210,000 £1 ordinary shares was paid on 1 July 20X4.
- (E) A proposed final ordinary dividend of 25 per cent for the year is to be accrued.
- (F) Depreciation of £12,000 has been charged before arriving at net trading profit. Capital allowances of £37,000 have been approved by the Inland Revenue. Account for timing differences.
- (G) Corporation tax on the first year's trading is expected to be £38,500.

**You are required to:**

- (a) show double entry accounts (other than bank) to record the above;
- (b) prepare extracts from the profit and loss account and balance sheet.

Debenture Interest								
20X4			£	20X4			£	
Dec	31	Bank	(B)	12,000	Dec	31	Profit and loss	16,000
Dec	31	Income tax	(C)	<u>4,000</u>				<u>16,000</u>
				<u>16,000</u>				<u>16,000</u>
Income Tax								
20X4			£	20X4			£	
Dec	31	Bank	(C)	<u>4,000</u>	Dec	31	Debenture interest (C)	<u>4,000</u>
Ordinary Dividends								
20X4			£	20X4			£	
Jul	1	Bank	(D)	21,000	Dec	31	Profit and loss	73,500
Dec	31	Accrued c/d		<u>52,500</u>				<u>73,500</u>
				<u>73,500</u>				<u>73,500</u>
Deferred Taxation								
20X4			£	20X4			£	
Dec	31	Balance c/d		<u>8,750</u>	Dec	31	Profit and loss* (F)	<u>8,750</u>
* (F) allowed £37,000 but only charged £12,000 = £25,000 × 35% corporation tax deferred = £8,750.								
Corporation Tax								
20X4			£	20X4			£	
Dec	31	Balance c/d		<u>38,500</u>	Dec	31	Profit and loss (G)	<u>38,500</u>

**Profit and Loss Account (extracts) for the year ended 31 December 20X4**

		£	£
Net trading profit	(A)		165,000
Less Debenture interest	(B)		<u>16,000</u>
Profit on ordinary activities before taxation			149,000
Corporation tax	(G)	38,500	
Deferred taxation	(F)	<u>8,750</u>	
			( 47,250)
Profit on ordinary activities after taxation			101,750
Less Dividends on ordinary shares:			
Interim paid 10 per cent	(D)	21,000	
Proposed final dividend 25 per cent		<u>52,500</u>	
			( 73,500)

**Balance Sheet (extracts) as at 31 December 20X4**

	£
<i>Creditors: amounts falling due within one year</i>	
Proposed ordinary dividend	52,500
Corporation tax	38,500
Deferred tax	8,750

**Exhibit 7.6**

Harlow Ltd, as per Exhibit 7.5, has now finished its second year of trading. From 20X4 there will be three ledger account balances to be brought forward from Exhibit 7.5. These accounts are:

Proposed ordinary dividend	(A)	Cr	£52,500
Corporation tax	(B)	Cr	£38,500
Deferred taxation	(C)	Cr	£8,750

You are given the following information:

- (D) The proposed ordinary dividend £52,500 was paid on 1 March 20X5.
- (E) Corporation tax remains at 35 per cent and income tax remains at 25 per cent.
- (F) Shares had been bought in STU Ltd and a dividend of £1,500 was received on 31 August 20X5.
- (G) An interim dividend of 15 per cent on the 210,000 £1 ordinary shares was paid on 1 July 20X5.
- (H) Debentures had been bought in RRR Ltd and interest (net) of £4,500 was received on 30 December 20X5.
- (I) Harlow Ltd paid its own debenture interest (net) of £12,000 on 31 December 20X5, and (J) the income tax account (net) was paid on the same date.
- (K) The corporation tax due for 20X4 was paid on 30 September 20X5.
- (L) A final ordinary dividend for the year of 30 per cent was proposed. This will be paid in March 20X6.
- (M) Corporation tax for the year ended 31 December 20X5 is expected to be £41,300.
- (N) Depreciation of £28,000 has been charged in the accounts, while capital allowances amounted to £22,000.
- (O) Net trading profit after deducting depreciation but before adjusting for the above was £178,000.

To record these items, we open a tax on profit on ordinary activities account and transfer tax items to it. After all entries have been made, the balance on the account is transferred to the profit and loss account.





### Ordinary Dividends

20X5				£	20X5				£
Mar	1	Bank	(D)	52,500	Jan	1	Balance b/d	(M)	52,500
Jul	1	Bank interim	(G)	31,500	Dec	31	Profit and loss		94,500
Dec	31	Accrued c/d	(L)	<u>63,000</u>					<u>147,000</u>
				<u>147,000</u>					

### Investment Income

20X5				£	20X5				£
Dec	31	Profit and loss		<u>1,500</u>	Aug	31	Bank	(F)	<u>1,500</u>
				<u>1,500</u>					<u>1,500</u>

### Debenture Interest Payable

20X5				£	20X5				£
Dec	31	Bank	(I)	12,000	Dec	31	Profit and loss		16,000
Dec	31	Income tax		<u>4,000</u>					<u>16,000</u>
				<u>16,000</u>					<u>16,000</u>

### Debenture Interest Receivable

20X5				£	20X5				£
Dec	31	Profit and loss		6,000	Dec	30	Bank	(H)	4,500
				<u>6,000</u>	Dec	30	Income tax		<u>1,500</u>
				<u>6,000</u>					<u>6,000</u>

### Income Tax

20X5				£	20X5				£
Dec	30	Debenture interest receivable		1,500	Dec	31	Debenture interest payable		4,000
Dec	31	Bank	(J)	<u>2,500</u>					<u>4,000</u>
				<u>4,000</u>					<u>4,000</u>

### Deferred Taxation

20X5				£	20X5				£
Dec	31	Tax on profit on ordinary activities (6,000 × 35%)	(N)	2,100	Jan	1	Balance b/d	(C)	8,750
Dec	31	Balance c/d		<u>6,650</u>					<u>8,750</u>
				<u>8,750</u>					<u>8,750</u>

### Corporation Tax

20X5				£	20X5				£
Sep	30	Bank	(K)	38,500	Jan	1	Balance b/d	(B)	38,500
Dec	31	Accrued c/d		<u>41,300</u>	Dec	31	Tax on profit on ordinary activities	(M)	<u>41,300</u>
				<u>79,800</u>					<u>79,800</u>

### Tax on Profit on Ordinary Activities

20X5				£	20X5				£
Dec	31	Corporation tax	(M)	41,300	Dec	31	Deferred taxation	(N)	2,100
				<u>41,300</u>	Dec	31	Profit and loss		<u>39,200</u>
				<u>41,300</u>					<u>41,300</u>

**Profit and Loss account (extracts) for the year ended 31 December 20X5**

		£	£
Net trading profit	(O)		178,000
Add Debenture interest received		6,000	
Investment income		<u>1,500</u>	
			<u>7,500</u>
			185,500
Less Debenture interest payable			( 16,000)
Profit on ordinary activities before taxation			169,500
Tax on profit on ordinary activities			( 39,200)
Profit on ordinary activities after taxation			<u>129,700</u>
Less Dividends on ordinary shares			
Interim paid 15 per cent		31,500	
Proposed final dividend		<u>63,000</u>	
			( 94,500)

**Balance Sheet (extracts) as at 31 December 20X5**

	£
<i>Creditors: amounts falling due within one year</i>	
Proposed ordinary dividend	63,000
Corporation tax	41,300
Deferred tax	6,650

**7.11 IAS 12 (Income taxes) and deferred tax**

The international accounting standard in this area is also IAS 12. In contrast to FRS 19, it requires deferred tax to be provided when assets are revalued and prohibits the discounting of future tax liabilities. Any deferred tax liability must be recognised in full.

**Learning outcomes**

You should now have learnt:

- 1 Depreciation is not allowed as an expense when calculating tax liability.
- 2 Capital allowances are the equivalent of depreciation that the government allows to be deducted when calculating tax liability.
- 3 The profit shown in the financial statements is normally different from assessable profit for corporation tax calculations.
- 4 Deferred tax eliminates the differences that arise as a result of depreciation being replaced by capital allowances when calculating corporation tax payable.
- 5 FRS 19: *Deferred tax* regulates the calculation of the figure for deferred tax that appears in the balance sheet.

**Answers to activities**

- 7.1** To answer this question, you need to consider why each of these rules is in place. Depreciation is governed by FRS 15: *Tangible fixed assets*. It is calculated so as to reflect the reduction in economic value of an asset over an accounting period. In other words, it is intended to give a true and fair

view of the true remaining value of an asset, subject to the effect of the basis upon which the base value of the asset has been derived. For example, if historical cost is the base, the remaining amount after depreciation has been deducted represents that proportion of the original value of the asset that remains at the balance sheet date.

Capital allowances are the government's assessment of how much of the historical cost of an asset can legitimately be treated as an expense in a given year. In most cases, the rate and method of calculation selected bear little relation to either the actual expected economic life of an individual asset or to the extent to which use of an asset has reduced its future economic life.

In some cases, capital allowances are intended to encourage successful business by enabling taxable profits to be reduced significantly in one year so that tax is lower than it would otherwise be. For example, capital allowances of 100% may be permitted for any company operating in economically depressed parts of the UK. The motivation for capital allowances is, therefore, very different from the principles underlying depreciation provisions.

**7.2** Capital allowances are allowed as a deduction against profit over the life of a fixed asset, as is depreciation. Thus, although in any particular period the amount of capital allowance is usually different from the depreciation charged in the profit and loss account, by the end of the life of a fixed asset, the amount granted in capital allowances will be the same as the total amount of depreciation charged.

**7.3** (a) Both businesses will have the same amount of accumulated profits.  
(b) The sole trader's business will have a greater amount of accumulated profits. It will, therefore, appear more successful than the company, even though both businesses are making the same annual profits. In fact, because the sole trader will have more assets in the business than the company (due to the fact that less cash has been paid out), it can be argued that it is the company that is the more successful business.

The answers are different because the sole trader has chosen to accept a lower level of net annual income than the owners of the company.

**7.4** You will either have found this question simple, straightforward and obvious, or you will have struggled to find the answer. Whichever position you were in, it is important that you remember this question whenever you are thinking about depreciation and/or about deferred tax. The answer is that depreciation is based on the difference between cost and the estimated disposal value of the asset. This asset cost £4,800. It is to be used for three years and its disposal value is estimated at £2,025. The amount to be depreciated over the three years is, therefore, £2,775. At  $33\frac{1}{3}$  per cent per annum straight-line, the annual depreciation charge is £925.

## Review questions

**Note:** Questions 7.5 and 7.6 will be sufficient for those taking examinations with little tax content.

**7.1** Camden Lock Ltd has just finished its first year of trading to 31 December 20X6. Corporation tax throughout was 40 per cent and income tax 20 per cent. You are given the following information:

- (i) Net trading profit, after adjustment for (ii) but before other adjustments, was £390,000.
- (ii) Depreciation of £70,000 was charged. Capital allowances were £110,000.
- (iii) An interim dividend of 4 per cent on 800,000 £1 ordinary shares was paid on 1 July 20X6.
- (iv) Debenture interest of £14,000 (net) was paid on 31 December 20X6.
- (v) Income tax deducted from debenture interest was paid on 31 January 20X7.
- (vi) A final dividend of 6 per cent was proposed for the year.
- (vii) Corporation tax for the year was estimated to be £145,000.

**You are required to:**

- (a) draw up the double entry accounts recording the above (except bank);
- (b) show the relevant extracts from the profit and loss account and the balance sheet.

*Note that Question 7.2A is concerned with the second year of trading for Camden Lock Ltd.*

**7.2A** Camden Lock Ltd has just finished its second year of trading to 31 December 20X7. Balances from Question 7.1 need to be brought forward into this question. Tax rates are the same as for 20X6.

The following information is available:

- (i) The proposed final dividend for 20X6 (see Review Question 7.1) was paid on 31 January 20X7.
- (ii) Shares in Strand Ltd were bought on 1 January 20X7. A dividend of £4,200 was received on 30 September 20X7.
- (iii) Debentures in Strand Ltd were bought on 1 July 20X7. Debenture interest of £8,400 (net) was received on 31 December 20X7.
- (iv) Debenture interest of £14,000 (net) was paid by Camden Lock Ltd on 31 December 20X7.
- (v) Income tax owing to the Inland Revenue for 20X7 was not paid until 20X8. The 20X6 income tax was paid on 30 January 20X7.
- (vi) An interim dividend of 5 per cent on 800,000 £1 ordinary shares was paid on 10 July 20X7.
- (vii) A final dividend of 9 per cent was proposed for the year.
- (viii) Depreciation of £90,000 was charged. Capital allowances were £120,000.
- (ix) Net trading profit (before taking into account (ii), (iii), and (iv)) was £540,000.
- (x) The corporation tax due for 20X6 was paid on 1 October 20X7. Corporation tax for the year to 31 December 20X7 is expected to be £160,000.

**You are required to:**

- (a) Draw up the double entry accounts recording the above (except bank).
- (b) Show the relevant extracts from the profit and loss account for the year and balance sheet at the year end.

**Note:** Question 7.3 is in the style of a typical professional accounting body's examination question. It is not easy. Remember to bring forward the balances from the previous year, some of which will often have to be deduced. The letters (A) to (L) against the information will make it easier for you to check your answer against the one at the back of the book.

To answer question of this type, first prepare all the T-accounts.

**7.3** Corporation tax for the tax years 20X7, 20X8, and 20X9 was 40 per cent and income tax for each year was 20 per cent.

- (A) Skim Ltd's draft profit and loss account for the year ended 31 December 20X8 shows a net trading profit from operations of £1.2 million. This figure is before taking into account (B) and (C1) and (C2).
- (B) Debenture interest paid on 5 December 20X8 (gross) was £200,000. Ignore accruals.
- (C1) Fixed rate interest received is £60,000 (net). Date received 9 November 20X8. Ignore accruals.
- (C2) A dividend of £2,000 was received from Beef Ltd on 1 October.
- (D) Depreciation was £180,000. This compares with £260,000 capital allowances given by the Inland Revenue. There is to be full provision for all timing differences for 20X8.
- (E) The income tax bill (net) in respect of (B) and (C1) was paid on 19 December 20X8.
- (F) Preference dividend paid on 6 July 20X8 £32,000.
- (G) Ordinary interim dividend paid 8 August 20X8 £180,000.
- (H) Proposed final ordinary dividend for 20X8 (paid in 20X9) was £300,000.
- (I) Proposed final ordinary dividend for 20X7 (paid 10 March 20X8) was £240,000.
- (J) There was a credit balance on deferred taxation account at 31 December 20X7 of £170,000.
- (K) Tax for 20X7 had been provided for at £280,000 but was finally agreed at £272,000 (paid on 6 October 20X8).
- (L) Corporation tax for 20X8 is estimated to be £340,000.

**You are required to** enter up the following accounts for the year ended 31 December 20X8 for Skim Ltd: Deferred tax; Income tax; Interest receivable; Debenture interest; Investment income; Corporation tax; Tax on profit on ordinary activities; Preference dividends; Ordinary dividends; Profit and loss account extract. Also prepare the relevant balance sheet extracts as at 31 December 20X8.





**7.4A** Joytan Ltd has a trading profit, before dealing with any of the undermentioned items, for the year ended 31 December 20X4 of £500,000. Prepare the profit and loss account for the year.

- (a) The standard rate of income tax is 25 per cent.
- (b) Joytan Ltd has bought £100,000 of 8 per cent debentures in another company. Joytan Ltd receives its interest, less income tax, for the year on 6 November 20X4.
- (c) Joytan has issued £300,000 of 10 per cent debentures, and pays interest, less income tax for the year on 22 December 20X4.
- (d) No cheque has been paid to the Inland Revenue for income tax.
- (e) Joytan Ltd has a liability for corporation tax, based on the year's profits for 20X4, of £210,000.
- (f) Joytan Ltd owns 90,000 ordinary shares of £1 each in Plax Ltd, and receives a cheque for the dividend of 15 per cent in October 20X4. Plax Ltd is neither a subsidiary company nor a related company of Joytan Ltd.
- (g) Joytan Ltd proposed a dividend of 9 per cent on its 500,000 ordinary shares of £1 each, payable out of the profits for 20X4.
- (h) Transfer £50,000 to general reserve.
- (i) Unappropriated profits brought forward from last year amounted to £122,000.

**7.5** Sunset Ltd has an operating profit for the year ended 31 December 20X2, before dealing with the following items, of £150,000. Complete the profit and loss account.

- (a) The standard rate of income tax is 25 per cent.
- (b) Sunset Ltd had issued £50,000 of 6 per cent debentures. It paid the interest for the year, less income tax, on 31 December 20X2.
- (c) Sunset Ltd owns £20,000 of 5 per cent debentures in another company. It received a year's interest, less income tax, on 27 December 20X2.
- (d) No cheque has been paid to the Inland Revenue for income tax.
- (e) Sunset Ltd has 30,000 ordinary shares of £1 each in Moonshine Ltd. Moonshine Ltd paid a dividend to Sunset Ltd of 12 per cent on 24 November 20X2. Moonshine Ltd is a 'related company' of Sunset Ltd.
- (f) Sunset Ltd had a liability for corporation tax, based on profits for 20X2, of £54,000.
- (g) Sunset proposed a dividend of 10 per cent on its 200,000 ordinary shares of £1 each, out of the profits for 20X2.
- (h) Transfer £10,000 to general reserve.
- (i) Unappropriated profits brought forward from last year amounted to £22,480.

**7.6** The following information relates to Kemp plc for the year to 31 March 20X9:

	<i>£m</i>
<b>1 Dividends</b>	
Proposed final ordinary dividend for the year to 31 March 20X8	
paid on 31 August 20X8	28
Interim ordinary dividend paid on 31 December 20X8	12
Proposed final ordinary dividend for the year 31 March 20X9 to be	
paid on 31 July 20X9	36
<b>2 Deferred taxation account</b>	
Credit balance at 1 April 20X8	3
During the year to 31 March 20X9 a transfer of £5 million was made from the	
profit and loss account to the deferred taxation account.	
<b>3 Tax rates</b>	
Corporation tax 35 per cent	
Income tax 25 per cent	

**Required:**

Write up the following accounts for the year to 31 March 20X9, being careful to insert the appropriate date for each entry and to bring down the balances as at 31 March 20X9:

- (i) ordinary dividends;
- (ii) deferred taxation.

(Association of Accounting Technicians)

**7.7A** The following figures appeared in W Ltd's balance sheet at 31 March 20X2:

Current liability – corporation tax	<u>£600,000</u>
Deferred taxation	<u>£300,000</u>

During the year ended 31 March 20X3, W Ltd made a payment of £520,000 to the Collector of Taxes in settlement of the company's corporation tax for the year ended 31 March 20X2. Dividend payments totalling £60,000 were made during the year ended 31 March 20X2 and a further dividend of £200,000 had been proposed at the year end.

Two dividend payments were made during the year ended 31 March 20X3. A payment of £200,000 was made for the final dividend for the year ended 31 March 20X2. An interim dividend of £40,000 was paid for the year ended 31 March 20X3. These payments were made in May 20X2 and September 20X2 respectively. The directors have provided a final dividend of £240,000 for the year ended 31 March 20X3.

W Ltd received a dividend of £12,000 from a UK quoted company. This was received in August 20X2.

W Ltd's tax advisers believe that corporation tax of £740,000 will be charged on the company's profits for the year ended 31 March 20X3. This amount is net of the tax relief of £104,000 which should be granted in respect of the exceptional loss which the company incurred during the year. It has been assumed that corporation tax will be charged at a rate of 35%. The basic rate of income tax was 25%.

It has been decided that the provision for deferred tax should be increased by £20,000. No provision is to be made in respect of timing differences of £400,000.

**You are required:**

- (a) to prepare the note which will support the figure for the provision for corporation tax in W Ltd's published profit and loss account for the year ended 31 March 20X3;
- (b) to calculate the liability for corporation tax which will appear in W Ltd's published balance sheet at 31 March 20X3;
- (c) to prepare the deferred tax note which will support the figure for the liability which will appear in W Ltd's published balance sheet at 31 March 20X3.

(Chartered Institute of Management Accountants)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)



# Provisions, reserves and liabilities

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the difference between a provision and a liability
- explain the difference between revenue reserves and capital reserves
- describe how capital reserves may be used
- describe what normally comprises distributable profits

## Introduction

In this chapter, you'll learn about the difference between provisions and liabilities and about the difference between revenue reserves and capital reserves. You will also learn about some of the restrictions on the use of reserves and learn more about what is meant by 'distributable profit'.

### 8.1 Provisions

A **provision** is an amount written off or retained in order to provide for renewals of, or diminution in value of assets, or retained to provide for any known liability of which the amount cannot be determined with 'substantial' accuracy. This therefore covers such items as **provisions for depreciation** and **provisions for doubtful debts**. A **liability** is an amount owing which can be determined with substantial accuracy.

Sometimes, therefore, the difference between a provision and a liability hinges around what is meant by 'substantial' accuracy. Rent owing at the end of a financial year would normally be known with precision, so would obviously be a liability. Legal charges for a court case which has been heard, but for which the lawyers have not yet submitted their bill, would be a provision.

See Chapter 11 for a clarification of the need for the distinction between liabilities and provisions when the requirements of the Companies Acts regarding disclosures in the financial statements are examined.

### 8.2 Revenue reserves

A **revenue reserve** is an account to which an amount has been voluntarily transferred from the profit and loss appropriation account, thus reducing the amount of profits left available for cash dividend purposes and crediting the appropriate **reserve account**. The reserve may be for some particular purpose, such as a **foreign exchange reserve account** created just in case the firm

should ever meet a situation where it would suffer loss because of foreign currency exchange rate movements; or it could be a **general reserve account** that could be used for any purpose.

**See Section 8.3 for a further look at general reserves.**

Such transfers are an indication to the shareholders that it would be unwise at the time of the transfer to pay out all the available profits as dividends. The resources represented by this part of the profits should be retained, at least for the time being. Revenue reserves can be called upon in future years to help swell the profits shown in the profit and loss appropriation account as being available for dividend purposes. This is effected quite simply by debiting the particular reserve account and crediting the profit and loss appropriation account.

#### Activity 8.1

Why do you think special revenue reserves are used, rather than simply leaving everything in the profit and loss account (which is, itself, a revenue reserve)?

### 8.3 General reserve

A general reserve is one that can be used for any purpose. For example, it may be needed because of the effect of inflation: assume a company needs £4,000 working capital in 20X3 and that the volume of trade remains the same for the next three years but that during that time, the general level of prices increases by 25 per cent: the working capital requirement will now be £5,000. If all the profits are distributed, the company will still have only £4,000 working capital which cannot possibly finance the same volume of trade as it did in 20X3. Transferring annual amounts of profits to a general reserve instead of paying them out as dividends is one way to help overcome this problem.

#### Activity 8.2

In terms of the amount of working capital, what is the difference between doing this and leaving the amount transferred in profit and loss?

On the other hand, it may just be the conservatism convention asserting itself, with a philosophy of 'it's better to be safe than sorry', in this case to restrict dividends because the funds they would withdraw from the business may be needed in a moment of crisis. This is sometimes overdone, with the result that a business has excessive amounts of liquid funds being inefficiently used when, if they were paid out to the shareholders, who are, after all, the owners of the business, the shareholders could put the funds to better use themselves.

This then leaves the question of the balance on the profit and loss appropriation account. If it is a credit balance, is it a revenue reserve? Yes. If profits are not distributed by way of dividend, they are revenue reserves until such time as they are converted into share capital or transferred to other reserves.

### 8.4 Capital reserves

A **capital reserve** is a reserve which is *not* available for transfer to the profit and loss appropriation account to swell the profits shown as available for cash dividend purposes. Most capital reserves can never be utilised for cash dividend purposes – notice the use of the word 'cash', as it will be seen later that bonus shares may be issued as a 'non-cash' dividend.

Let us look at the ways in which capital reserves are created.

## Capital reserves created in accordance with the Companies Acts

The Companies Acts state that the following are capital reserves and can never be utilised for the declaration of dividends payable in cash:

- 1 Capital redemption reserve – *see* Chapter 5.
- 2 Share premium account – *see* Chapter 4.
- 3 Revaluation reserve – where an asset has been revalued, an increase is shown by a debit in the requisite asset account and a credit in the revaluation account. The recording of a reduction in value is shown by a credit in the asset account and a debit in the revaluation account.

## Capital reserves created by case law

Distributable profits per the Companies Acts have been described earlier in this volume. The definition includes the words ‘in accordance with principles generally accepted’. As accounting develops and changes there will obviously be changes made in the ‘principles generally accepted’.

Quite a few law cases have been decided to establish exactly whether an item represents a distributable profit and, therefore, is available for cash dividend purposes. Where it is not, the item that is not distributable should be transferred to a capital reserve account. These cases will have to be studied at the more advanced stages of accounting, so will not be dealt with here.

## 8.5 Using capital reserves

These can only be used in accordance with the Companies Acts. The following description of the actions which can be taken assumes that the Articles of Association are the same as Table A for this purpose, and that therefore there are no provisions in the articles to prohibit such actions.

### Capital redemption reserve (for creation *see* Chapter 5)

- 1 To be applied in paying up unissued shares of the company as fully paid shares. These are commonly called bonus shares, and are dealt with in Chapter 9.
- 2 Can be reduced only in the manner as to reduction of share capital (*see* Chapter 9).
- 3 Can be reduced, in the case of a private company, where the permissible capital payment is greater than the nominal value of shares redeemed/purchased (*see* Chapter 5).

### Share premium account (for creation *see* Chapter 4)

- 1 The same provision referring to bonus shares as exists with the capital redemption reserve.
- 2 Writing off preliminary expenses.
- 3 Writing off expenses and commission paid on the issue of shares or debentures.
- 4 In writing off discounts on shares or debentures issued (for creation of these accounts, *see* Chapter 4).
- 5 Providing any premium payable on redemption or purchases of shares or debentures.

### Revaluation reserve

Where the directors are of the opinion that any amount standing to the credit of the revaluation reserve is no longer necessary then the reserve must be reduced accordingly. An instance of this would be where an increase in the value of an asset had been credited to the revaluation account, and there had subsequently been a fall in the value of that asset.

The revaluation reserve may also be reduced where the permissible capital payment exceeds the nominal value of the shares redeemed/purchased.

### Profits prior to incorporation (for creation see Chapter 6)

These can be used for the issuing of bonus shares, paying up partly paid shares, or alternatively they may be used to write down goodwill or some such similar fixed asset.

### Created by case law

These can be used in the issue of bonus shares or in the paying up of partly paid shares.

## 8.6 Distributable profits

Distributable profits have already been defined. Accounting standards will apply unless they come into conflict with the Companies Acts themselves.

Normally the revenue reserves, including any credit balance on the profit and loss account, would equal distributable profit.

### Development costs

Under Section 269 of the Companies Act 1985, any development costs which have been capitalised have to be deducted from distributable profits, *unless* there are special circumstances justifying the capitalisation. Normally this means that SSAP 13: *Research and development* will apply.

### Depreciation on revalued assets

There is a conflict here between FRS 15: *Tangible fixed assets* and the Companies Acts. The Companies Acts require depreciation on revalued assets to be based on the revalued amounts. However, the Companies Acts allow the extra depreciation because of the revaluation to be *added back* when calculating distributable profit.

### Distributions in kind

Where a company makes a non-cash distribution, for example by giving an investment, and that item (i.e. in this case the investment) has been revalued, it could generally be said that part of the distribution was unrealised profit locked into investment. However, the Companies Acts allow this because the 'unrealised' profit is 'realised' by the distribution (from the company's viewpoint, anyway).

## 8.7 Distributions and auditors' reports

The Companies Acts prohibit any particular distribution if the auditor's report is qualified, with one exception. The exception is that if the amount involved is *not* material and the auditor agrees to this fact, then distribution of an item can take place.

If a distribution is unlawfully made, any member knowing it to be so could be made to repay it. If the company could not recover such distributions then legal proceedings could be taken against the directors.

## Learning outcomes

You should now have learnt:

- 1 Provisions involve uncertainty over the precise amount involved, it being impossible to determine the amount with 'substantial' accuracy.
- 2 Liabilities can be determined with 'substantial' accuracy.
- 3 That there are two main categories of reserves:
  - (a) revenue reserves (can be freely distributed)
  - (b) capital reserves (subject to restrictions on their distribution).
- 4 That there is often no need to transfer amounts from profit and loss into a revenue reserve. However, doing so does signal the likelihood of some future event and so could improve the true and fair view of the financial statements.
- 5 Some of the uses that can be made of capital reserves.
- 6 What normally comprises distributable profits.

## Answers to activities

- 8.1** There is no simple answer to this question. Reserves of this type were fairly common some years ago, mainly because they signalled that the business was being prudent and preparing to meet some future expense. Some people might suggest that some transfers of this type were made so as to retain cash in the business and thus avoid the interest costs of borrowing funds. (Funds already held by a business are the cheapest form of finance available.) It could be argued that transferring reserves from the profit and loss account to a repairs reserve, for example, stops shareholders complaining that they have not received a high enough dividend, thus enabling the company to use its cash resources for other purposes.

However, nowadays, investors are more sophisticated than in the past and they are unlikely to be confused by such a transfer between reserves. That is, the fact that reserves had been transferred into a repairs reserve would not prevent investors from complaining that they had not received a high enough dividend. Also, nowadays, they would both wish to know why the transfer had taken place *and* expect it to be used for the purpose indicated.

In reality, it matters not a bit whether businesses make reserve transfers of this type. They may feel it is more informative to do so, but there is no need for such transfers to occur.

- 8.2** There is no difference. The cash has not been paid out so, in both cases, working capital increases accordingly. Transferring the amount from profit and loss to a general reserve simply indicates that some funds are being retained for an undefined purpose.

## Review question

- 8.1** An extract from the draft accounts of Either Ltd at 30 November 20X5 shows the following figures before allowing for any dividend which might be proposed:

	£000
Ordinary shares of £1 each	400
6% preference shares of £1 each	150
Capital redemption reserve	300
Revaluation reserve	125
General reserve	80
Profit and loss account	13
	<u>1,068</u>
Operating profit before taxation for the year	302
Taxation	145
	<u>157</u>

*Additional information includes:*

- (i) The revaluation reserve consists of an increase in the value of freehold property following a valuation in 20X3. The property concerned was one of three freehold properties owned by the company and was subsequently sold at the revalued amount.
- (ii) It has been found that a number of stock items have been included at cost price, but were being sold after the balance sheet date at prices well below cost. To allow for this, stock at 30 November 20X5 would need to be reduced by £35,000.
- (iii) Provision for directors' remuneration should be made in the sum of £43,000.
- (iv) Included on the balance sheet is £250,000 of research and development expenditure carried forward.
- (v) No dividends have yet been paid on either ordinary or preference shares for the year to 30 November 20X5, but the directors wish to pay the maximum permissible dividends for the year.
- (vi) Since the draft accounts were produced it has been reported that a major customer of Either Ltd has gone into liquidation and is unlikely to be able to pay more than 50p in the £ to its creditors. At 30 November 20X5 this customer owed £60,000 and this has since risen to £180,000.
- (vii) It has been decided that the depreciation rates for plant and machinery are too low but the effect of the new rates has not been taken into account in constructing the draft accounts. The following information is available:

Plant and machinery	£
Purchases at the commencement of the business on 1 December 20X1 at cost	100,000
Later purchases were:	
1 June 20X3	25,000
29 February 20X4	28,000
31 May 20X4	45,000
1 December 20X4	50,000

In the draft financial statements depreciation has been charged at the rate of 25 per cent using the reducing balance method and charging a full year's depreciation in the year of purchase. It has been decided to change to the straight line method using the same percentage but charging only an appropriate portion of the depreciation in the year of purchase. There have been no sales of plant and machinery during the period.

**Required:**

- (a) Calculate the maximum amount which the directors of Either Ltd may propose as a dividend to be paid to the ordinary shareholders whilst observing the requirements of the Companies Acts. Show all workings and state any assumptions made.
- (b) Outline and discuss any differences which might have been made to your answer to (a) if the company were a public limited company.

For the purposes of this question you may take it that corporation tax is levied at the rate of 50 per cent.

(Association of Chartered Certified Accountants)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# The increase and reduction of the share capital of limited companies

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the various ways in which a limited company may alter its share capital
- describe the difference between a bonus issue and a rights issue of shares
- explain why a company may introduce a scheme for the reduction of its capital
- describe the effect upon the balance sheet of bonus issues, rights issues and schemes for the reduction of capital

## Introduction

Sometimes companies need to alter their issued share capital. In this chapter, you'll learn about the alternatives available. You'll learn about the difference between scrip issues and rights issues and how to record the appropriate ledger account entries when either occurs. You will also learn that the nominal value of share capital can be reduced, and how to do so.

### 9.1

## Alteration of capital

A limited company may, if authorised by its articles, and if the correct legal formalities are observed, alter its share capital in any of the following ways:

- 1 Increase its share capital by issuing new shares, e.g. increase authorised share capital from £500,000 to £1 million and then issue more shares.
- 2 Consolidate and divide all or any of its share capital into shares of a larger nominal value than its existing shares, for instance convert 500,000 ordinary shares of £1 each into 100,000 ordinary shares of £5 each.
- 3 Convert all or any of its paid-up shares into debentures, and reconvert those debentures into shares of any denomination, e.g. convert 100,000 ordinary shares of £1 each into £100,000 debentures and then issue 200,000 ordinary shares of 50p each.
- 4 Subdivide all, or any, of its shares into shares of smaller denominations, e.g. convert 1 million ordinary shares of £1 each into 2 million ordinary shares of £0.50 each, or 4 million ordinary shares of 25p each.
- 5 Cancel shares which have not been taken up. This is known as 'diminution of capital', and is not to be confused with 'reduction of capital', described later in the chapter. Thus, a company with an authorised share capital of £200,000 and an issued share capital of £175,000 can alter its share capital to authorised share capital of £175,000 and issued share capital of £175,000.

**Activity  
9.1**

Why do you think a company would wish to change its share capital?

**9.2 Bonus shares**

These are shares issued to existing shareholders free of charge. An alternative name often used is **scrip issue**.

If the articles give the power, and the requisite legal formalities are observed, the following may be applied in the issuing of bonus shares:

- 1 The balance of the profit and loss appropriation account.
- 2 Any other revenue reserve.
- 3 Any capital reserve, e.g. share premium.

This thus comprises all of the reserves.

The reason why this should ever be needed can be illustrated by taking the somewhat exaggerated example shown in Exhibit 9.1.

**Exhibit 9.1**

When Better Price Ltd started in business 50 years ago, it issued 10,000 ordinary shares of £1 each and deposited £10,000 in the bank. The company has constantly retained a proportion of its profits to finance its operations, thus diverting them from being used for cash dividend purposes. This has preserved an appropriate level of working capital.

The firm's balance sheet as at 31 December 20X7 is shown as:

Better Price Ltd Balance Sheet as at 31 December 20X7 (before bonus shares are issued)	
	£
Fixed assets	150,000
Current assets /less current liabilities	<u>150,000</u>
	<u>300,000</u>
Share capital	10,000
Reserves (including profit and loss balance)	<u>290,000</u>
	<u>300,000</u>

If an annual profit of £45,000 was being earned (i.e. 15 per cent on capital employed) and £10,000 were paid annually as cash dividends, then the dividend declared each year would be 100 per cent (i.e. a dividend of £10,000 on shares with a nominal value of £10,000).

It is obvious that the dividends and the share capital are out of step with one another. Employees and trade unions could start complaining due to a lack of accounting knowledge (or even misuse of it) because they believe that the company is making unduly excessive profits. Customers may also be deluded into thinking that they are being charged excessive prices. Even though this could be demonstrated not to be true because of the prices charged by competitors, they may still have the feeling that they are somehow being duped.

In fact, an efficient company in this industry may only be achieving 'average' rewards for the risks it has taken if it is making a profit of 15 per cent on capital employed. The figure of 100 per cent for the dividend is due to the very misleading convention in accounting in the UK of calculating dividends in relationship to the nominal amount of the share capital, rather than the capital employed.







If it is felt that £80,000 of the reserves could not be used for dividend purposes, due to the fact that the net assets should remain at a minimum of £90,000, made up of fixed assets £80,000 and working capital of £10,000, then besides the £10,000 share capital which cannot be returned to the shareholders there are also £80,000 of reserves which cannot be rationally returned to them. Instead of this £80,000 being called reserves, it might as well be called capital, as it is needed by the business on a permanent basis.

To remedy this position, as well as some other less obvious needs, the concept of bonus shares was developed. The reserves are made non-returnable to the shareholders by being converted into share capital. Each holder of one ordinary share of £1 each will receive eight bonus shares (in the shape of eight ordinary shares) of £1 each. The balance sheet, if the bonus shares had been issued immediately, would be:

**Better Price Ltd**  
**Balance sheet as at 31 December 20X7**  
 (after bonus shares are issued)

	£
Fixed assets	150,000
Current assets /less current liabilities	<u>150,000</u>
	<u>300,000</u>
Share capital (£10,000 + £80,000)	90,000
Reserves (£290,000 – £80,000)	<u>210,000</u>
	<u>300,000</u>

When the annual dividends of £10,000 are declared in the future, they will represent:

$$\frac{£10,000}{£90,000} \times \frac{100}{1} = \text{a dividend of 11.1 per cent}$$

This will cause fewer problems in the minds of employees, trade unions and customers.

Of course the issue of bonus shares may be seen by any of the interested parties to be some form of excessive generosity on the part of the company. To give eight shares of £1 each free for one previously owned may be seen as unfair by employees and their trade unions. In fact, the shareholders have gained nothing. Before the bonus issue there were 10,000 shareholders who owned between them £300,000 of net assets. Therefore, assuming for this purpose that the book 'value' is the same as any other 'value', each share was worth £30. After the bonus issue, each shareholder has nine shares for every one share held before. If a shareholder had owned one share only, he now owns nine shares. He is therefore, the owner of  $\frac{9}{90,000}$  of the company. The 'value' of the net assets is £300,000, and he owns  $\frac{9}{90,000}$  of them, so his shares are worth £30. This is exactly the same 'value' as that applying before the bonus issue was made.

It would be useful, in addition, to refer to other matters for comparison. Anyone who had owned a £1 share 50 years ago, then worth £1, would now have nine £1 shares. A new house of a certain type 50 years ago might have cost £x; it may now cost £9x. Price inflation affects different items in different ways. The cost of a bottle of beer may now be y times greater than it was 50 years ago, a loaf of bread may cost z times more, and so on. But, at least the shareholders now have some tangible increase in the nominal value of their investment. Of course, the company has brought a lot of trouble on itself by waiting so many years to capitalise its reserves. It should have been done in several stages over the years.

This is a very simplified example, but it is a situation many companies have had to face. There is, also, no doubt that a misunderstanding of accounting and financial matters has caused a great deal of unnecessary friction in the past and will probably still do so in the future. Yet another very common misunderstanding is the assumption that the asset balance sheet values equal the amount they could be sold for. Thus, a profit of £100,000 when the book value of the net assets is £200,000 may appear to be excessive yet, if the realisable value of the net assets were used, the

net worth of the company may be £2 million, making a profit of £100,000 appear perhaps a little low, rather than appearing excessive.

The accounting entries when bonus shares are issued are to debit the reserve accounts utilised, and to credit a bonus account. The shares are then issued and the entry required to record this is to credit the share capital account and to debit the bonus account. The journal entries in our example would be:

The Journal		
	Dr	Cr
	£	£
Reserve account(s) (show each account separately)	80,000	
Bonus account		80,000
<i>Transfer of an amount equal to the bonus payable in fully paid shares</i>		
Bonus account	80,000	
Share capital account		80,000
<i>Allotment and issue of 80,000 shares of £1 each, in satisfaction of the bonus declared</i>		

### 9.3 Rights issue

You learnt in Chapter 4 that a company can also increase its issued share capital by making a **rights issue**. This is the issue of shares to existing shareholders at a price lower than the ruling market price of the shares. You will remember that the price is lower so as to compensate for the reduction in value of shares held previously.

The price at which the shares of a very profitable company are quoted on the Stock Exchange is usually higher than the nominal value of the shares. For instance, the market price of the shares of a company might be quoted at £2.50 while the nominal value per share is only £1.00. If the company has 800,000 shares of £1 each and declares a rights issue of one for every eight held at a price of £1.50 per share, it is obvious that it will be cheaper for the existing shareholders to buy the rights issue at this price instead of buying the same shares in the open market for £2.50 per share. Assume that all the rights issue were taken up, then the number of shares taken up will be 100,000 (i.e.  $800,000 \div 8$ ), and the amount paid for them will be £150,000. The journal entries will be:

The Journal		
	Dr	Cr
	£	£
Cash	150,000	
Share capital		100,000
Share premium		50,000
Being the rights issue of 1 for every 8 shares held at a price of £1.50 nominal value being £1.00		

As the nominal value of each share is £1.00 while £1.50 was paid, the extra 50p constitutes a share premium to the company.

Notice also that the market value of the shares will be reduced or 'diluted' by the rights issue, as was the case for bonus shares. Before the rights issue there were 800,000 shares at a price of £2.50, giving a market capitalisation of £2 million. After the rights issue there are 900,000 shares and the assets have increased by £150,000. The market value may now be £2.39 [ $(£2 \text{ million} + £150,000) / 900,000$ ], although the precise market price after the rights issue will be

influenced by the information given surrounding the sale about the future prospects of the company and may not be exactly the £2.39 calculated above.

## 9.4 Reduction of capital

### Where capital is not represented by assets

Any scheme for the reduction of capital needs to go through legal formalities via the shareholders and other interested parties, and must receive the consent of the court.

Capital reduction means that the share capital – all of it if there is only one class such as ordinary shares, or all or part of it if there is more than one class of shares – has been subjected to a lessening of its nominal value, or of the called-up part of the nominal value. Thus:

- (a) a £4 share might be converted into a £3 share;
- (b) a £5 share might be converted into a £1 share;
- (c) a £3 share, £2 called up, might be converted into a £1 share fully paid up;
- (d) a £5 share, £3 called up, might be converted into a £3 share £1 called up;

plus any other variations.

Why should such action be necessary? The reasons are rather like the issue of bonus shares in reverse. However, in this case, the share capital has fallen out of line with the assets, in that the share capital is not fully represented by assets. For example, Robert Ltd may have a balance sheet as follows:

**Robert Ltd**  
**Balance Sheet as at 31 December 20X7**

	£
Net assets	<u>300,000</u>
Ordinary share capital	
100,000 ordinary shares of £5 each, fully paid	500,000
Less Profit and loss (debit balance)	<u>(200,000)</u>
	<u>300,000</u>

The net assets are shown at £300,000, and it is felt that the book value represents a true and fair view of their actual value. The company will almost certainly be precluded from paying dividends until the debit balance on the profit and loss account has been eradicated and replaced with a credit balance. If profits remaining after taxation are now running at the rate of £30,000 per annum, it will be seven years before a dividend can be paid. One reason for buying shares is to provide income (although there may well enter another reason, such as capital appreciation). Consequently, the denial of income to the shareholders for this period of time could seriously affect the company.

A solution would be to cancel, i.e. reduce, the capital which was no longer represented by assets. In this case, £200,000 of the share capital can lay no claim to any assets. The share capital should therefore be reduced by £200,000. This is done by converting the shares into £3 shares fully paid instead of £5 shares. The balance sheet would become:

**Robert Ltd**  
**Balance Sheet as at 31 December 20X7**

	£
Net assets	<u>300,000</u>
	<u>300,000</u>
Ordinary share capital	<u>300,000</u>
	<u>300,000</u>

Now that there is no debit balance on the profit and loss appropriation account, the £30,000 available profit next year can be distributed as dividends.

Of course, the Robert Ltd example has been simplified to make what is being explained easier to understand. Often, both preference and ordinary shareholders are involved. Sometimes, debenture holders as well. Even creditors occasionally sacrifice part of the amount owing to them, the idea being that the increase in working capital so generated will help the firm to achieve prosperity, in which case the creditors hope to once again enjoy the profitable contact that they used to have with the company.

Capital reduction schemes are matters for negotiation between the various interested parties. For instance, preference shareholders may be quite content for the nominal value of their shares to be reduced if the rate of interest they receive is increased accordingly. As with any negotiation, the various parties will put forward their points of view and discussions will take place until a compromise solution is arrived at. When the court's sanction has been obtained, the accounting entries are:

- 1 For amounts written off assets:  
*Dr* Capital reduction account  
*Cr* Various asset accounts
- 2 For reduction in liabilities (e.g. creditors):  
*Dr* Liability accounts  
*Cr* Capital reduction account
- 3 The reduction in the share capital:  
*Dr* Share capital accounts (each type)  
*Cr* Capital reduction account
- 4 If a credit balance now exists on the capital reduction account:  
*Dr* Capital reduction account (to close)  
*Cr* Capital reserve

It is unlikely that there would ever be a debit balance on the capital reduction account, as the court would rarely agree to any scheme which would bring this about.

Capital reduction schemes for private companies are used less frequently now than previously, thanks to companies having been granted the right to purchase their own shares.

### Where some of the assets are no longer needed

Where some of the firm's assets are no longer needed, probably due to a contraction in the firm's activities, a company may find itself with a surplus of liquid assets. Subject to the legal formalities being observed, in this case the reduction of capital is effected by returning cash to the shareholders, i.e.:

- 1 *Dr* Share capital account (with amount returnable)  
*Cr* Sundry shareholders
- 2 *Dr* Sundry shareholders  
*Cr* Bank (amount actually paid)

Such a scheme could be objected to by the creditors if it affected their interests.

## Learning outcomes

You should now have learnt:

- 1 That a limited company may alter its share capital if it is authorised to do so by its Articles of Association.
- 2 Alterations to share capital can be made by a limited company:
  - (a) issuing new shares;
  - (b) consolidating all or any of its share capital into shares of a higher nominal value;
  - (c) converting paid-up shares into debentures and then reconverting the debentures back into shares of another denomination;
  - (d) subdividing all or any of its share capital into shares of a lower nominal value;
  - (e) cancelling shares that have not been 'taken up' – the difference between the 'authorised share capital' and the 'issued share capital'.
- 3 Some reasons why companies change their share capital.
- 4 That where share capital is overvalued in relation to assets, a capital reduction scheme may be adopted in order to bring the share capital into line with the underlying asset value of the business as reported in the balance sheet.

## Answer to activity

- 9.1 As you will see later in this chapter, there are many possible reasons. It may be that the nominal value of the share capital is significantly understated compared with current earnings. An increase in nominal share capital would help redress this imbalance and make things like earnings per share more intuitively meaningful. Alternatively, it may be that large reserves have been built up and the company wishes to increase the amount of its share capital by converting the reserves into shares. Another possibility is that the share price has risen significantly since the shares were first quoted on the Stock Exchange and it now appears unreasonably high relative to comparable shares. By splitting each share into a number of shares of a lower nominal value, the share price can be brought back to an appropriate level. Don't forget, companies can both increase and reduce the nominal value of their share capital.

## Review questions

9.1 The Merton Manufacturing Co Ltd has been in business for many years making fitted furniture and chairs. During 20X4 and 20X5 substantial losses have been sustained on the manufacture of chairs and the directors have decided to concentrate on the fitted furniture side of the business which is expected to produce a profit of at least £22,500 per annum before interest charges and taxation. A capital reduction scheme has been proposed under which:

- (i) a new ordinary share of 50p nominal value will be created;
- (ii) the £1 ordinary shares will be written off and the shareholders will be offered one new ordinary share for every six old shares held;
- (iii) the £1 6 per cent redeemable preference shares will be cancelled and the holders will be offered for every three existing preference shares, one new ordinary share and £1 of a new 8 per cent debenture;
- (iv) the existing 11 per cent debenture will be exchanged for a new debenture yielding 8 per cent and in addition existing debenture holders will be offered one new ordinary share for every £4 of the old debenture held;

- (v) existing reserves will be written off;
- (vi) goodwill is to be written off;
- (vii) any remaining balance of write-off which is necessary is to be achieved by writing down plant and equipment; and
- (viii) existing ordinary shareholders will be invited to subscribe for two fully paid new ordinary shares at par for every three old shares held.

The balance sheet of the Merton Manufacturing Co Ltd immediately prior to the capital reduction is as follows:

	£	£
<i>Fixed intangible assets</i>		
Goodwill at cost less amounts written off		50,000
<i>Fixed tangible assets</i>		
Freehold land and buildings at cost		95,000
Plant and equipment at cost	275,000	
Less Depreciation to date	( 89,500)	
		<u>185,500</u>
		330,500
<i>Current assets</i>		
Stocks	25,000	
Debtors	<u>50,000</u>	
	75,000	
<i>Current liabilities</i>	£	
Creditors	63,500	
Bank overdraft	<u>15,850</u>	
	(79,350)	
Excess of current liabilities		( 4,350)
		<u>326,150</u>
<i>Long-term loan</i>		
11½ per cent debenture, secured on the freehold land and buildings		(100,000)
		<u>226,150</u>
		£
<i>Share capital and reserves</i>		
£1 ordinary shares fully paid		90,000
6 per cent £1 redeemable preference shares fully paid		150,000
Share premium account		25,000
Profit and loss account		( 38,850)
		<u>226,150</u>

On a liquidation, freehold land and buildings are expected to produce £120,000, plant and equipment £40,000, stocks £15,000 and debtors £45,000. Goodwill has no value.

There are no termination costs associated with ceasing the manufacture of chairs.

**Required:**

- (a) Assuming that the necessary approval is obtained and that the new share issue is successful, produce a balance sheet of the company showing the position immediately after the scheme has been put into effect.
- (b) Show the effect of the scheme on the expected earnings of the old shareholders.
- (c) Indicate the points which a preference shareholder should take into account before voting on the scheme.

Corporation tax may be taken at 33⅓ per cent.

(Association of Chartered Certified Accountants)



On 31 December 20X5 a final trial balance extracted from the books showed the following position:

Approval of the Court was obtained for the following scheme for reduction of capital:

- At the same time as the resolution to reduce capital was passed, another resolution was approved restoring the total authorised capital to £350,000, consisting of 150,000 6 per cent cumulative preference shares of £0.75 each and the balance in ordinary shares of £0.125 each. As soon as the above resolutions had been passed 500,000 ordinary shares were issued at par, for cash, payable in full upon application.

(a) to show the journal entries necessary to record the above transactions in the company's books;  
and

- (Institute of Chartered Accountants)

**9.3** On 31 March 20X2, the following was the balance sheet of Quality Yarns Ltd.

<i>Balance Sheet</i>			
	£	£	£
<i>Fixed assets</i>			
Goodwill and trade marks as valued		280,000	
Plant and machinery (at cost less depreciation)		320,000	
Furniture and fittings (at cost less depreciation)		<u>8,400</u>	
			608,400
<i>Current assets</i>			
Stock		190,200	
Sundry debtors		74,600	
Cash		<u>300</u>	
Less: Current liabilities		265,100	
Sundry creditors	33,200		
Bank overdraft	<u>44,400</u>	( 77,600)	
			<u>187,500</u>
			<u>795,900</u>
<i>Authorised capital</i>			
200,000 6 per cent preference shares of £1 each		200,000	
3 million ordinary shares of 50p each		<u>1,500,000</u>	
		<u>1,700,000</u>	
<i>Issued and fully paid capital</i>			
100,000 6 per cent preference shares of £1 each			100,000
1,750,000 ordinary shares of 50p each			<u>875,000</u>
			975,000
Capital reserve		60,000	
Less: Profit and loss		<u>(239,100)</u>	<u>(179,100)</u>
			<u>795,900</u>

The following scheme of capital reduction was sanctioned by the Court and agreed by the shareholders:

- Preference shares were to be reduced to 80p each.
- Ordinary shares were to be reduced to 25p each.
- The capital reserve was to be eliminated.
- The reduced shares of both classes were to be consolidated into new ordinary shares of £1 each.
- An issue of £300,000 5 per cent debentures at par was to be made to provide fresh working capital.
- The sum written off the issued capital of the company and the capital reserve to be used to write off the debit balance of the profit and loss account and to reduce fixed assets by the following amounts:

Goodwill and trade marks	£250,000
Plant and machinery	£22,200
Furniture and fittings	£4,400

- The bank overdraft was to be paid off out of the proceeds of the debentures which were duly issued and paid in full.

A further resolution was passed to reduce the authorised capital of the company to 1,750,000 ordinary shares of £1 each.

**Required:**

Prepare journal entries (cash transactions to be journalised) to give effect to the above scheme and draw up the balance sheet of the company after completion of the scheme.





→ **9.4A** The balance sheet of Tatters Ltd on 31 December 20X8 was as follows:

<i>Balance Sheet</i>		
	£	£
Goodwill		50,000
<i>Fixed assets</i>		<u>190,000</u>
		240,000
<i>Current assets</i>		
Stock	21,000	
Work in progress	3,000	
Debtors	25,000	
Bank	<u>18,000</u>	
		67,000
Capital expenses		
Formation expenses		<u>3,000</u>
		310,000
Less: Current liabilities		
Creditors		( 30,000)
		280,000
Less: 5 per cent debentures		( 60,000)
		<u>220,000</u>
Issued share capital		
200,000 ordinary shares of £1 each		200,000
100,000 4 per cent cumulative preference shares of £1 each		<u>100,000</u>
		300,000
Less: Profit and loss		( 80,000)
		<u>220,000</u>

The dividend on the preference shares is £12,000 in arrears. A scheme of reconstruction was accepted by all parties and was completed on 1 January 20X9.

A new company was formed, Rags Ltd, with an authorised share capital of £250,000, consisting of 250,000 ordinary shares of £1 each. This company took over all the assets of Tatters Ltd. The purchase consideration was satisfied partly in cash and partly by the issue, at par, of shares and 6 per cent debentures by the new company in accordance with the following arrangements:

- 1 The creditors of the old company received, in settlement of each £10 due to them, £6 in cash and four fully paid ordinary shares in the new company.
- 2 The holders of preference shares in the old company received nine fully paid ordinary shares in the new company to every ten preference shares in the old company and four fully paid ordinary shares in the new company for every £5 of arrears of dividend.
- 3 The ordinary shareholders in the old company received one fully paid share in the new company for every four ordinary shares in the old company.
- 4 The holders of 5 per cent debentures in the old company received £50 in cash and £50 of 6 per cent debentures issued at par for every £100 debenture held in the old company.
- 5 The balance of the authorised capital of the new company was issued at par for cash and was fully paid on 1 January 20X9.
- 6 Goodwill was eliminated, the stock was valued at £15,000 and the other current assets were brought into the new company's books at the amounts at which they appeared in the old company's balance sheet. The balance of the purchase consideration represented the agreed value of the fixed assets.

**You are required to show:**

- (a) the closing entries in the realisation account and the sundry shareholders account in the books of Tatters Ltd.

- (b) your calculation of:
- (i) the purchase consideration for the assets, and
  - (ii) the agreed value of the fixed assets;
- (c) the summarised balance sheet of Rags Ltd as on 1 January 20X9.

**9.5A** The ledger balances of Tick Tick Ltd at 31 March 20X1 were as follows:

	£
Freehold premises	90,000
Plant	300,000
Stock	82,000
Debtors	96,000
Development expenditure*	110,000
Cash at bank	11,000
Profit and loss (debit balance)	121,000
250,000 8 per cent preference shares of £1 each	250,000
500,000 ordinary shares of £1 each	500,000
Creditors	60,000

A capital reduction scheme has been sanctioned under which the 250,000 preference shares are to be reduced to 80p each, fully paid; and the 500,000 ordinary shares are to be reduced to 20p each, fully paid.

Development expenditure and the debit balance on profit and loss account are to be written off, the balance remaining being used to reduce the book value of the plant.

**Required:**

Prepare the journal entries recording the reduction scheme and the balance sheet as it would appear immediately after the reduction. Narrations are not required in connection with journal entries.

**\*Development expenditure is a fixed asset.**

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Accounting standards and related documents

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the measures being taken by the Accounting Standards Board to develop a framework for the preparation and presentation of financial statements
- describe the full range of UK accounting standards currently in issue, their aims and objectives and identify the equivalent international accounting standards

## Introduction

In this chapter, you'll learn about the background to the formation of the UK Accounting Standards Board and of the range of UK accounting standards that have been issued since 1971. At the same time, you will learn about the equivalent accounting standards that have been issued by the International Accounting Standards Board.

### 10.1 Why do we need accounting standards?

Accounting is used in every kind of business and organisation from large multinational organisations to your local shop, from sole traders to companies. It can cover activities as different as breweries, charities, churches, dentists, doctors, lawyers, mines, oil wells, betting shops, banks, cinemas, circuses, funeral undertakers, farms, waste disposal, deep-sea diving, airlines, estate agents and so on.

Let's assume that you have received a copy of the published financial statements of a company. You want to be sure that you can rely on the methods it selected to calculate its revenues, expenditures and balance sheet values. Without this assurance you would not be able to have any faith at all in the figures, and could not sensibly take any decision concerning your relationship with the company.

It is the same for all investors. People invest in organisations of all types and they would all like to have faith and trust in the figures reported in their financial statements. But this diversity of type of business, and also of size, means that, while general principles can be laid down, detailed regulations that it would make sense to apply to one company would be wholly inappropriate for another company. It is, quite simply, impossible to provide 100 per cent assurance of the validity of the financial statements of every conceivable organisation through the creation of a single set of rules and procedures. There has to be some flexibility within the rules laid down.

If it isn't feasible to produce a set of all-encompassing regulations, why bother with rules at all? To understand why there was a move to regulation, we need to look back to what happened in the 1960s.

## 10.2 The background

In the late 1960s there was a general outcry that the methods used by different businesses were showing vastly different profits on similar data. In the UK, a controversy had arisen following the takeover of AEI Ltd by GEC Ltd. In fighting the takeover bid made by GEC, the AEI directors had produced a forecast, in the tenth month of their financial year, that the profit before tax for the year would be £10 million. After the takeover, the financial statements of AEI for that same year showed a loss of £4.5 million. The difference was attributed to there being £5 million of ‘matters substantially of fact’ and £9.5 million of ‘adjustments which remain matters substantially of judgement’.

The financial pages of the national press started demanding action, calling for the accounting profession to lay down consistent principles for businesses to follow.

In December 1969, the Institute of Chartered Accountants in England and Wales issued a *Statement of Intent on Accounting Standards in the 1970s*. The Institute set up the Accounting Standards Steering Committee in 1970. Over the following six years, it was joined by the five other UK and Irish accountancy bodies and, in 1976, the committee became the Accounting Standards Committee (ASC). The six accountancy bodies formed the Consultative Committee of Accountancy Bodies (CCAB).

Prior to the issue of any accounting standard by the ASC, a great deal of preparatory work was done and an exposure draft (ED) was issued and copies were sent to those with a special interest in the topic for comment. The journals of the CCAB (i.e. the official magazines of each of the six accountancy bodies) also gave full details of the exposure drafts. After the period allowed for consultation ended, it was seen to be desirable, and an accounting standard on the topic was issued. The Standards issued by the ASC were called Statements of Standard Accounting Practice (SSAPs).

Because the ASC had to obtain approval from its six professional accountancy body members, it did not appear to be as decisive and independent as was desired. In 1990, a new body, the Accounting Standards Board (ASB), took over the functions of the ASC. The ASB is more independent of the accounting bodies and can issue its recommendations, known as financial reporting standards (FRSs), without approval from any other body. The ASB adopted the SSAPs in force but many have since been replaced by FRSs and, as at December 2004, only 8 SSAPs remain in force. As with the ASC, the ASB issues exposure drafts – FREDs – on which comments are invited prior to the issue of a new standard.

In 1997, the ASB issued a third category of standard – the Financial Reporting Standard for Smaller Entities (FRSSE). SSAPs and FRSs had generally been developed with the larger company in mind. The FRSSE was the ASB’s response to the view that smaller companies should not have to apply all the cumbersome rules contained in the SSAPs and FRSs. It is, in effect, a collection of some of the rules from virtually all the other accounting standards. Small companies can choose whether or not to apply the FRSSE or, as seems unlikely, continue to apply all the other accounting standards.

In addition to the FRSs and the FRSSE, the ASB also issues Urgent Issues Task Force Abstracts (UITFs). These are issued in response to an urgent need to regulate something pending the issue of a new or amended FRS. They have the same status as an FRS but, due to the perceived urgent need for them to be issued, no exposure drafts are issued.

While there is no general law compelling observation of the standards, accounting standards have had statutory recognition since the Companies Act 1989 became law. As a result, apart from entities exempted from certain standards or sections within standards – SSAPs 13 (*Research and development*) and 25 (*Segmental reporting*), and FRS 1 (*Cash flow statements*), for example, all contain exemption clauses based on company size – accounting standards must be complied with by all entities when preparing financial statements intended to present a ‘true and fair view’. The Companies Acts state that failure to comply with the requirements of an accounting standard must be explained in the financial statements.

Historically, the main method of ensuring compliance with the standards by their members has always been through each professional body's own disciplinary procedures on their members. The ASB felt this was insufficient – such measures only seek to control individual accountants, not the organisations they work for. As a result, it created a Review Panel with power to prosecute companies under civil law where their financial statements contain a major breach of the standards.

This book deals in outline with all UK accounting standards issued and still in force up to December 2004. It does not deal with all the many detailed points contained in the standards and exposure drafts. It would be a far larger book if this was attempted. Students at the later stages of their professional examinations will need to get full copies of all standards and study them thoroughly (*see also* G Black, *Accounting and Financial Reporting Standards* and J Blake, *Accounting Standards*).

The remainder of this chapter deals with all the current UK and international accounting standards and related documents which are not covered in detail elsewhere in this book. The reason for its focusing upon both sets of standards is due to the requirement that, from 2005, all European listed companies must adopt and comply with international accounting standards when preparing their consolidated financial statements. All other organisations have the option to do so and it is only a question of time before all UK and Irish organisations do so as well.

It is, however, unclear just when all organisations will be using international standards. There is, for example, no international equivalent of the FRSSE (though the IASB is currently looking at whether to produce a series of accounting standards purely for use by smaller enterprises.)

**This clearly creates problems for students and authors alike. Be guided by your teachers and lecturers and, most importantly, by the syllabus you are to be examined upon. It is likely that most exam bodies will continue to focus upon UK standards, at least in the short term. This is not to say that they are likely to ignore international standards. Far from it. They are likely to start examining aspects of international standards but it is difficult to foresee their doing so when examining topics other than company financial statements. One obvious topic they are likely to target is the Cash flow statement, which is much simpler under IAS7 Cash flow statements than under the UK accounting standard of the same name, FRS1. Chapter 14 of this book has been revised in order to include the IAS7 requirements, so that you will be able to prepare a cash flow statement under either IAS7 or FRS1.**

During this transition period, this book will continue to focus on UK accounting standards. However, reference to the equivalent international standard(s) will be made and the manner in which the requirements of the equivalent international standard(s) differ on specific topics will also be shown.

The next section presents an overview of international accounting standards.

## 10.3 International accounting standards

The Accounting Standards Board issues accounting standards for adoption in the UK and Ireland. Other countries also have their own accounting standards boards – for example, the FASB (Financial Accounting Standards Board) operates in the USA and Australia has the AASB (Australian Accounting Standards Board). However, many smaller countries could not justify the creation of their own accounting standards but needed some form of regulation over the financial statements produced. This led, in 1973, to the setting up of the International Accounting Standards Committee (IASC). The IASC was replaced in 2001 by the International Accounting Standards Board (IASB). At that time, like the ASB, the IASB adopted all the International Accounting Standards (IASs) that the IASC had issued. All new standards issued by the IASB are called International Financial Reporting Standards (IFRSs).

The work of the IASB is overseen by 19 trustees, six from Europe, six from the USA, and four from Asia/Pacific. The remaining three can be from anywhere so long as geographical balance is retained. The IASB has 12 full-time members and two part-time members. Of the 14, at least five

must have been auditors, three financial statement preparers, three users of financial statements and one an academic.

When the IASC was founded, it had no formal authority and the IASs were entirely voluntary and initially intended for use in countries that did not have their own accounting standards or which had considerable logistical difficulty in establishing and maintaining the infrastructure necessary to sustain a national accounting standards board.

Apart from providing standards for use in countries that do not issue their own accounting standards, the need today for the IASB is mainly due to:

- 1 The considerable growth in international investment, which means it is desirable to have similar methods the world over so that investment decisions are more compatible.
- 2 The growth in multinational firms which have to produce financial statements covering a large number of countries. Standardisation between countries makes the accounting work easier, and reduces costs.
- 3 It is desirable that the activities and efforts of the various national standard-setting bodies be harmonised.

Up until 2005, SSAPs and FRSs had precedence over international accounting standards in the UK and Ireland. However, as the ASB has been at pains to ensure that most of the provisions of the relevant international standards are incorporated in existing SSAPs or FRSs, the difference in the information required or in the manner of its presentation is often minimal. To this end, each FRS indicates the level of compliance with the relevant international standard(s), making it easier for companies to determine the potential impact on their financial statements should they adopt international standards instead of SSAPs and FRSs.

### Activity 10.1

Why do you think this switch in the UK and Ireland towards international accounting standards has occurred?

Let's look at the principles that underpin accounting standards, not just in the UK and Ireland, but internationally as well.

## 10.4 Statement of Principles

In 1999, the Accounting Standards Board issued its *Statement of Principles*. The objective of this document is to assist the ASB, and all other users of financial statements (see Chapter 27), by clarifying the concepts that underlie its work and so, therefore, underpin the rules issued by the ASB relating to the preparation and presentation of financial statements. The *Statement of Principles* is not, however, an accounting standard. It does not contain any requirements on how financial statements should be prepared and does not override any standard.

When the ASB first started developing the *Statement of Principles*, it drew heavily upon the IASC's *Framework for the Preparation and Presentation of Financial Statements*. The *Statement of Principles* is very similar in content to the framework documents issued by the accounting standard-setters in Australia, Canada, New Zealand and the USA, so aiding the move towards internationalisation of accounting standards and harmonisation of accounting practice.

### Objectives

'The objective of Financial Statements is to provide information about the financial position, performance and financial adaptability of an enterprise, that is useful to a wide range of users in making economic decisions.'

## Information

The *Statement of Principles* emphasises that a key characteristic of the information contained in financial statements is that it be useful. A diagram was included in an early draft of the *Statement of Principles* which shows how these characteristics related to each other. The diagram is shown in Exhibit 10.1.

## Qualitative characteristics of financial information

Financial statements should contain information that is ‘useful’. Information is useful if it is *relevant*, *reliable*, *comparable* and *understandable*. The four terms are defined by the ASB as follows:

- 1 **Relevant.** Information is relevant if it has the ability to influence the economic decisions of users and is provided in time to influence those decisions.
- 2 **Reliable.** Information is reliable if:
  - (a) it can be depended upon to represent faithfully what it either purports to represent or could reasonably be expected to represent, and therefore reflects the substance of the transactions and other events that have taken place;
  - (b) it is complete and is free from deliberate or systematic bias and material error; and
  - (c) in its preparation under conditions of uncertainty, a degree of caution has been applied in exercising the necessary judgements.
- 3 **Comparable.** Information is comparable if it enables users to discern and evaluate similarities in, and differences between, the nature and effects of transactions and other events over time and across different reporting entities.
- 4 **Understandable.** Information is understandable if its significance can be perceived by users that have a reasonable knowledge of business and economic activities and accounting and a willingness to study with reasonable diligence the information provided.

Where there is a conflict between these four characteristics, the objectives of financial statements must be met by arriving at a trade-off. For example, relevance is considered to be more important than reliability.

Notes indicated by the numbers in brackets in Exhibit 10.1 give further insights into these four characteristics.

### Note 1

An item of information is material to the financial statements if its omission or mis-statement might influence an economic decision of a user of the financial statements. It follows that information which is not material is not useful and is therefore beyond the threshold for inclusion in the financial statements.

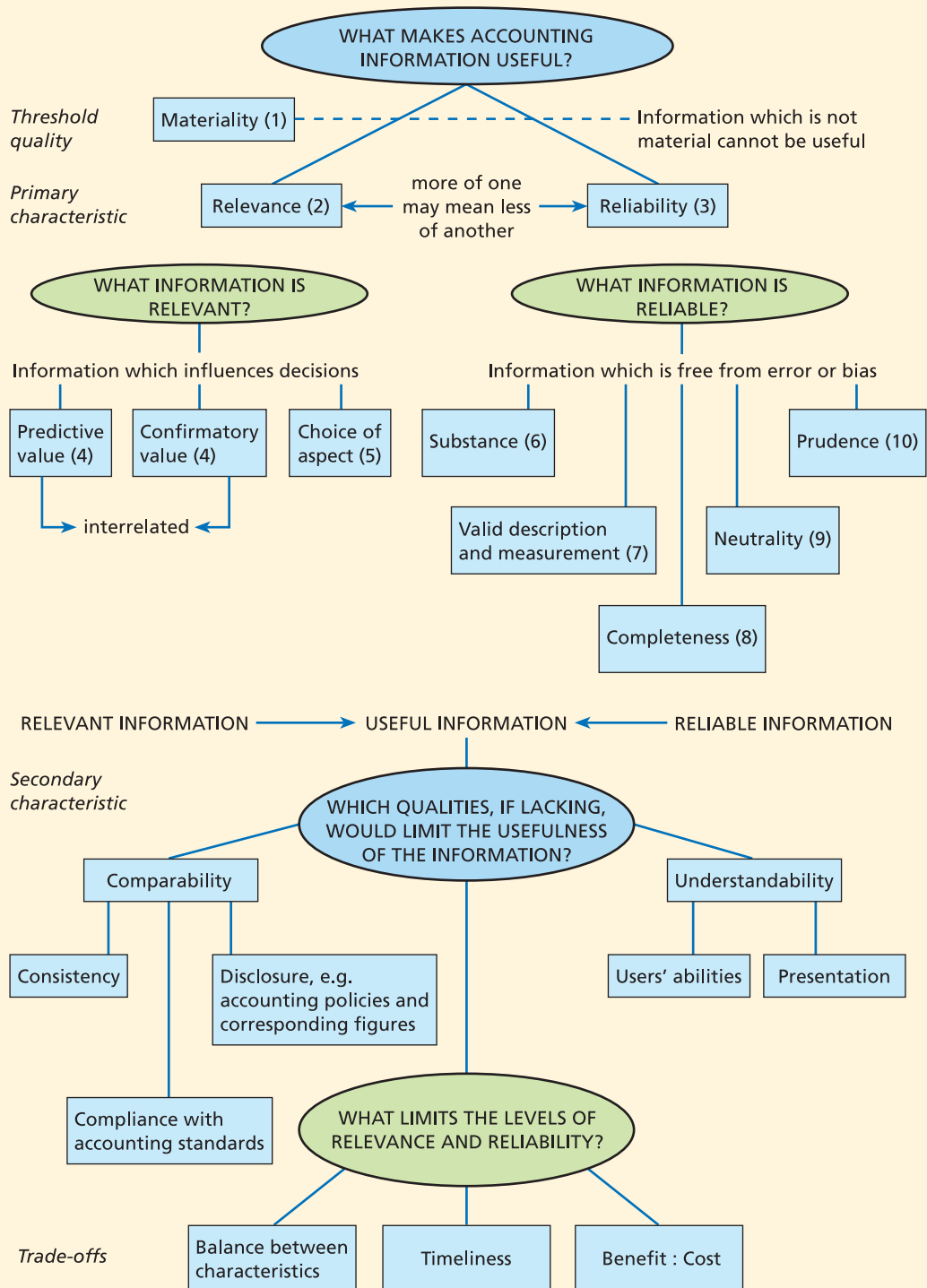
### Note 2

To be useful, information must be relevant to the decision-taking needs of users. Relevance relates to the influence of the information on the user’s evaluation of events – past, present or future. This evaluation can be influenced by the way items in financial statements are presented.

### Note 3

As you saw earlier, reliability means information free from material error and bias and which can be relied on by users to conform with descriptions given.

It is clear that information may be very relevant but unreliable – e.g. a betting tip at a horse race. Reliability may not ensure relevance, e.g. reliable analysis of last year’s performance may

**Exhibit 10.1 The qualitative characteristics of accounting information**

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exclude important indicators of future potential, such as new management in position. *Relevance* and *reliability* are primary characteristics of accounting information.

They are broken down into further characteristics as follows.

## Notes on relevance

### Note 4

Predictive value means using an analysis of current or past performance to predict a future outcome. The same information can be used to confirm whether predictions in past periods have come true. Confirmatory value is this second part, i.e. checking past predictions.

### Note 5

The term ‘choice of aspect’ implies that there may be significant choice for the preparer of accounts as to which aspects of transactions to represent. For example, a business might acquire a new building in a good position for trading and on which it owns the freehold. Another relevant piece of information is that the property is in an area proposed for a new motorway and could well be the subject of a compulsory purchase order. To be relevant to a user who wishes to value the business for future prospects, both aspects of the information are relevant. Note that a simple statement that the property was owned and showing its purchase price would be a valid description and measurement and therefore reliable – so far as it went.

## Notes on reliability

### Note 6

Substance indicates that information should represent the events it purports to represent. Sometimes complex legal arrangements may be entered into to obscure the ownership of assets. To be reliable, the true operation and ownership of the assets with respect to the substance must be reflected in the financial statements. Artificial legal transactions should not obscure the substance.

### Note 7

Although the title indicates the intention, it is important to relate this aspect of reliability to Note 5 ‘choice of aspect’. ‘Valid description and measurement’ needs to be applied to the appropriate aspects of events.

### Note 8

This indicates that incomplete information may make it false or misleading and thus not relevant.

### Note 9

Neutrality implies freedom from bias. This indicates that financial statements should not be prepared with the intention of influencing decisions in any particular way.

### Note 10

Prudence implies a degree of caution (anticipating losses) in the valuation of assets. In many cases this is subjective as it relates to the future, e.g. in predicting doubtful debts. This aspect should not be used to overestimate potential losses and thus misrepresent the affairs of an organisation.

In the second part of the chart, secondary characteristics which, if lacking, would limit the usefulness of the information are shown. Comparability and understandability have already

been covered above. The other items shown are self-explanatory and are not discussed further in this text.

### Activity 10.2

Why do you think there is such an emphasis on the 'qualitative' aspects of information in the *Statement of Principles*?

We'll now look at each of the current UK accounting standards, in number order. However, because it underpins every other UK accounting standard, we'll start by looking at FRS 18: *Accounting policies*.

## 10.5 FRS 18: Accounting policies

Users of financial statements issued by organisations want to analyse and evaluate the figures contained within them. They cannot do this effectively unless they know which accounting policies have been used when preparing such statements. This FRS was issued to help continue the improvement in the quality of financial reporting that had been started in 1971 by the accounting standard it replaced, SSAP 2.

The FRS focuses upon **accounting policies** and considers the **estimation techniques** used in implementing them. It also looks in detail at the various accounting concepts.

### Accounting policies

These are defined in FRS 18 as:

*those principles, bases, conventions, rules and practices applied by an entity that specify how the effects of transactions and other events are to be reflected in its financial statements through:*

- (i) *recognising,*
- (ii) *selecting measurement basis for, and*
- (iii) *presenting*  
*assets, liabilities, gains, losses and changes to shareholders' funds.*

In other words, accounting policies define the processes whereby transactions and other events are reflected in the financial statements. The accounting policies selected should enable the financial statements to give a true and fair view and should be consistent with accounting standards, UITFs and company legislation.

When selecting an accounting policy, its appropriateness should be considered in the context of the four 'objectives' (or characteristics of information) you met when you learnt about the *Statement of Principles*:

- 1 *Relevance* – Does the accounting policy produce information that is useful for assessing stewardship and for making economic decisions?
- 2 *Reliability* – Does it reflect the substance of the transaction and other events that have occurred? Is it free of bias, i.e. neutral? Is it free of material error? If produced under uncertainty, has prudence been exercised?
- 3 *Comparability* – Can it be compared with similar information about the entity for some other period or point in time?
- 4 *Understandability* – Is it capable of being understood by users who have a reasonable knowledge of business and economic activities and accounting?

## Estimation techniques

These are the methods adopted in order to arrive at estimated monetary amounts for items that appear in the financial statements.

## Examples of accounting policies

- 1 The treatment of gains and losses on disposals of fixed assets – they could be applied to adjust the depreciation charge for the period, or they may appear as separate items in the financial statements.
- 2 The classification of overheads in the financial statements – for example, some indirect costs may be included in the trading account, or they may be included in administration costs in the profit and loss account.
- 3 The treatment of interest costs incurred in connection with the construction of fixed assets – these could be charged to profit and loss as a finance cost, or they could be capitalised and added to the other costs of creating the fixed assets – this is allowed by FRS 15: *Tangible fixed assets*.

The equivalent IASs to FRS 18 are IAS 1 (*Presentation of financial statements*) and IAS 8 (*Net profit or loss for the period*). The differences in the requirements of these two standards and FRS 18 are minimal.

## 10.6 SSAP 4: Accounting for government grants

Many different types of grant are or have been obtainable from government departments. Where these relate to revenue expenditure, e.g. subsidies on wages, they should be credited to revenue in the period when the revenue is incurred. The principle is that the grants should be recognised in the profit and loss account so as to match the expenditure to which they are intended to contribute.

Where there are grants relating to capital expenditure, then SSAP 4 states that they should be credited to revenue *over the expected useful economic life of the asset*. This may be achieved by treating the amount of the grant as a deferred income, a portion of which is credited to the profit and loss account annually, over the life of the asset, on a basis consistent with depreciation. The amount of the deferred credit should, if material, be shown separately. It should not be shown as part of shareholders' funds.

The same effect as treating the grant as deferred income would be achieved by crediting the grant to the fixed asset account and depreciating only the net balance of the cost of the asset over its lifetime (depreciation is thus reduced by the grant). However, although this method is acceptable in principle, it is considered to be illegal under the Companies Act 1985 Schedule 4 para. 17, which requires the balance sheet value of a fixed asset to be its purchase price or production cost.

The equivalent IAS is IAS 20 (*Accounting for government grants and disclosure of government assistance*). There are no major differences between the requirements of SSAP 4 and IAS 20.

## 10.7 SSAP 5: Accounting for value added tax

All that needs to be noted here is that *Business Accounting 1* deals with SSAP 5. There is no need here to go into further detail at this stage of your studies. There is no equivalent international standard.

## 10.8 SSAP 9: Stocks and long-term contracts

Due to the many varying kinds of businesses and conditions in companies, there simply cannot be one system of valuation for stocks and long-term contracts. All that the standard can do is to narrow down the different methods that could be used. It does so, initially, by dealing with them as separate and distinct items.

### Stocks

Stocks should be stated at the total of the lower of cost and net realisable value of the separate items of stock or of groups of similar items. Profit should not, except in the case of long-term contracts, be recognised in advance, but immediate account should be made for anticipated losses.

In the balance sheet (or in the notes), stocks should be sub-classified so as to indicate the amounts held in each of the main categories in the standard balance sheet formats (as adapted where appropriate) of the Companies Act 1985. (These categories are *raw materials and consumables*, *work in progress*, *finished goods and goods for resale*, and *payments on account*.)

**Net realisable value** consists of the expected selling price less any expenses necessary to sell the product. This may be below cost because of obsolescence, deterioration and similar factors. SSAP 9 also defines 'cost' and certainly in the case of a manufacturing business it will also include overhead expenses, so that prime cost could not be used. **Cost** is defined in SSAP 9 in relation to the different categories of stocks and work in progress as being:

*that expenditure which has been incurred in the normal course of business in bringing the product or service to its present location and condition. This expenditure should include, in addition to cost of purchase [as defined later] such costs of conversion [as defined later] as are appropriate to that location and condition.*

**Cost of purchase** comprises purchase price including import duties, transport and handling costs and any other directly attributable costs, less trade discounts, rebates and subsidies.

**Cost of conversion** comprises:

- (a) costs which are specifically attributable to units of production, i.e. direct labour, direct expenses and subcontracted work;
- (b) production overheads (as defined later);
- (c) other overheads, if any, attributable in the particular circumstances of the business to bringing the product or service to its present location and condition.

**Production overheads** based on the normal level of activity and including fixed production overheads, taking one year with another, should all be included. Obviously, neither selling nor general administration costs should be included in cost.

Notice that abnormal costs should not be included, as they should not have the effect of increasing stock valuation.

The last in, first out (LIFO) and base stock methods should not be used, as they do not provide an up-to-date valuation. Although LIFO is not accepted by the SSAP, the Companies Act 1985 accepts its use.

The standard does accept that replacement cost may, in certain circumstances, be acceptable. As a result, the lower of replacement cost or net realisation value may be used. Again, this is in accord with the Companies Act 1985.

The equivalent international standard is IAS 2 (*Inventories*). There is no significant difference between the two standards.

## Long-term contracts

Chapter 15 of this book deals with long-term contracts. The equivalent IASs are IAS 11 (*Construction contracts*) and IAS 18 (*Revenue*). As with IAS 2, there is no significant difference between the requirements of SSAP 9 and those of the international standards.

## 10.9 SSAP 13: Accounting for research and development

SSAP 13 divides research and development expenditure under three headings, except for the location or exploitation of oil, gas or mineral deposits, or where all expenditure will be reimbursed by a third party. The three headings are:

- 1 **Pure (or basic) research.** Experimental or theoretical work undertaken primarily to acquire new scientific or technical knowledge for its own sake rather than directed towards any specific aim or application.
- 2 **Applied research.** Original or critical investigation undertaken in order to gain new scientific or technical knowledge and directed towards a specific practical aim or objective.
- 3 **Development.** Use of scientific or technical knowledge in order to produce new or substantially improved materials, devices, products or services, to install new processes or systems prior to the commencement of commercial production or commercial applications, or to improve substantially those already produced or installed.

Expenditure incurred on pure and applied research can be regarded as part of a continuing operation required to maintain a company's business and its competitive position. In general, one particular period rather than another will not be expected to benefit and therefore it is appropriate that these costs should be written off as they are incurred.

The development of new and improved products is, however, distinguishable from pure and applied research. Expenditure on such development is normally undertaken with a reasonable expectation of specific commercial success and of future benefits arising from the work, either from increased revenue and related profits or from reduced costs. However, development expenditure should be written off in the year of expenditure, except in the following circumstances when it may be deferred to future periods:

- (a) there is a clearly defined project; and
- (b) the related expenditure is separately identifiable; and
- (c) the outcome of such a project has been assessed with reasonable certainty as to:
  - (i) its technical feasibility; and
  - (ii) its ultimate commercial viability considered in the light of factors such as:
    - likely market conditions (including competing products)
    - public opinion
    - consumer and environmental legislation
- (d) furthermore, a project will be of value only if:
  - (i) the aggregate of the deferred development cost and any further development costs to be incurred on the same project together with related production, selling and administration costs is reasonably expected to be exceeded by related future revenues; and
  - (ii) adequate resources exist, or are reasonably expected to be available, to enable the project to be completed and to provide any consequential increases in working capital.

The elements of uncertainty inherent in the considerations set out in points (a) to (d) are considerable. There will be a need for different persons having differing levels of judgement to be involved in assessing the technical, commercial and financial viability of the project. Combinations of the possible different assessments which they might validly make can produce widely differing assessments of the existence and amounts of future benefits.

If these uncertainties are viewed in the context of the concept of prudence, the future benefits of most development projects would be too uncertain to justify carrying the expenditure forward. Nevertheless, in certain industries it is considered that there are numbers of major development projects that satisfy the stringent criteria set out above.

The standard says that if the criteria are satisfied then expenditure may be deferred to the extent that its recovery can reasonably be regarded as assured. It is also required that where this policy is adopted, all projects meeting the criteria should be included.

If development costs are deferred, they should be amortised over the period of sale or use of the product.

At each accounting date the unamortised balance of development expenditure should be examined project by project to ensure that it still fulfils the criteria. Where any doubt exists as to the continuation of those circumstances the balance should be written off.

Fixed assets may be acquired or constructed to provide facilities for research and/or development activities. The use of such fixed assets will usually extend over a number of accounting periods and accordingly they should be capitalised and written off over their usual life.

The standard requires that accounting policy on research and development expenditure should be stated and explained. The total amount of research and development expenditure charged in the profit and loss account should be disclosed, analysed between the current year's expenditure and amounts amortised from deferred expenditure. Movement on deferred expenditure and the amount carried forward at the beginning and end of the period should be disclosed. Deferred development expenditure should be disclosed under intangible fixed assets in the balance sheet.

The equivalent international standard is IAS 38 (*Intangible assets*). Under the IAS, development costs *must* be capitalised.

## 10.10 SSAP 16: Current cost accounting

See Chapter 30 for an outline of this outdated and suspended SSAP.

## 10.11 SSAP 19: Accounting for investment properties

Under the accounting requirements of FRS 15: *Tangible fixed assets*, tangible fixed assets are generally subject to annual depreciation charges to reflect on a systematic basis the wearing out, consumption or other loss of value whether arising from use, effluxion of time or obsolescence through technology and market changes. Under those requirements it is also accepted that an increase in the value of such a fixed asset does not generally remove the necessity to charge depreciation to reflect on a systematic basis the consumption of the asset.

A different treatment is, however, required where a significant proportion of the fixed assets of an enterprise is held not for consumption in the business operations but as investments, the disposal of which would not materially affect any manufacturing or trading operations of the enterprise. In such cases, the current value of these investments and changes in that current value are of prime importance rather than a calculation of systematic annual depreciation. Consequently, for the proper appreciation of the financial position, a different accounting treatment is considered appropriate for fixed assets held as investments (called, in this standard, 'investment properties').

Investment properties may be held by a company which holds investments as part of its business such as an investment trust or a property investment company. Investment properties may also be held by a company whose main business is not the holding of such investments.

Where an investment property is held on a lease with a relatively short unexpired term, it is necessary to recognise the annual depreciation in the financial statements to avoid the situation whereby a short lease is amortised against the investment revaluation reserve while the rentals are taken to the profit and loss account.

This statement requires investment properties to be included in the balance sheet at open market value. The statement does not require the valuation to be made by qualified or independent valuers, but calls for disclosure of the names or qualifications of the valuers, the bases used by them and whether the person making the valuation is an employee or officer of the company. However, where investment properties represent a substantial proportion of the total assets of a major enterprise (e.g. a listed company) the valuation thereof would normally be carried out:

- (a) annually by persons holding a recognised professional qualification and having recent post-qualification experience in the location and category of the properties concerned, and
- (b) at least every five years by an external valuer.

The equivalent IAS is IAS 40 (*Investment property*). The main difference concerns the value used in the balance sheet. SSAP 19 requires annual revaluation. IAS 40 allows either revaluation or depreciation of net book value. Also, where revaluation is used, SSAP 19 gains or losses are recognised in the statement of total gains and losses. Only permanent deficits appear in the profit and loss account. IAS 40 recognises all gains and losses on revaluation in the profit and loss account.

## 10.12 SSAP 20: Foreign currency translation

The rules of SSAP 20 were shown in Chapter 1 of this book. There is only need here for a few extra comments.

### Hyperinflation

If there is hyperinflation the methods described in Chapter 1 may not give a fair view of the results. In these cases it may first of all be necessary to produce accounts adjusted for inflation. However, no guidance is provided in the standard as to how to define a 'high rate' of inflation or how to perform the adjustment to current price. UITF 9: *Accounting for operations in hyperinflationary economies* was issued in June 1993 to clarify this area.

UITF 9 confirmed that adjustments are required when the hyperinflationary impact will affect the true and fair view. It also states that adjustments are required where the cumulative inflation rate over three years is approaching or exceeds 100 per cent – effectively a rule-of-thumb definition of the term 'hyperinflation'.

It suggested two methods that could be adopted in order to eliminate the distortions caused by hyperinflation. (If neither was deemed suitable, the reasons should be stated and another method should be adopted.) Either the local currency financial statements should be adjusted to reflect current price levels before being translated, or a relatively stable currency (e.g. the US dollar or sterling) should be used as the currency of measurement (the *functional* currency) for the relevant foreign operations. In the latter case, the functional currency would effectively be the *local* currency as defined in SSAP 20; and, if the transactions are not initially recorded in the functional currency, they must be measured in that currency by applying the temporal method based on the functional currency.

### Hedging against exchange losses

Losses incurred may be set off against profits made in the computation of exchange dealings.



## Disclosure

The method used to translate currencies should be disclosed. Net profits/net losses on translation must be disclosed, irrespective of whether they are shown in the profit and loss account or as a movement of reserves.

The equivalent international accounting standards are IAS 21 (*The effects of changes in foreign exchange rates*) and IAS 29 (*Financial reporting in hyperinflationary economies*). They do not allow use of closing rate for profit and loss account items. Instead, average rate must be used. The other main difference concerns goodwill, which must be translated at closing rate. When hyperinflation is involved, IAS 29 requires use of appropriate indices to restate the financial statements, rather than use of a stable currency.

### 10.13 SSAP 21: Accounting for leases and hire purchase contracts

Details of SSAP 21 were given in Chapter 2. The equivalent international standard is IAS 17 (*Leases*). There are some differences in the classification criteria of these two standards.

### 10.14 SSAP 25: Segmental reporting

This standard was introduced to help interpret the requirement of the Companies Act 1985 that the information in the financial statements should be broken down (segmented) in two principal ways: by class of business and geographically. A **class of business** is a distinguishable component of an entity that provides a separate product or service. A **geographical segment** is an area comprising an individual country or group of countries in which an entity operates.

The main provisions of the standard can be summarised as follows. If an entity has two or more classes of business and operates in two or more geographical segments, then it should report for each class and segment:

- (a) **turnover** – split between that to external activities and that to other segments;
- (b) **result**, i.e. profit before taxation, minority interest and extraordinary items;
- (c) **net assets**.

The equivalent international standard is IAS 14 (*Segment reporting*). SSAP 25 exempts companies from disclosure if prejudicial to the company. IAS 14 requires disclosure. Also, while SSAP 25 requires disclosure of net assets, IAS 14 requires that assets and liabilities be disclosed.

### 10.15 Statements of Recommended Practice and UITF Consensus Pronouncements

In 1986 the Accounting Standards Committee (ASC) issued the first statement of recommended practice (SORP). It is important to note that SORPs are different from accounting standards. Provisions in standards must be carried out, unless there is sufficient and adequate evidence to prove otherwise and, in addition, any non-compliance must be clearly stated. A SORP simply sets out what is considered to be the best practice on a particular topic in respect of which it is not considered suitable to issue a standard at that time. Companies are simply encouraged to use the SORP. No action will be taken by the accounting bodies if a SORP is not followed.

A sub-category of SORPs was introduced, called 'franked SORPs'. Generally these refer to topics which are of limited application for a specific industry and they are not included in this text.



The ASB does not issue SORPs. In the event that the ASB's authority is required to standardise practice within a specialised industry, the ASB will issue an industry standard if the issue cannot be resolved under the existing accounting standards.

In 1991, the ASB set up a committee known as the Urgent Issues Task Force (UITF). This committee assists the ASB in areas where an accounting standard or Companies Act provision exists but where unsatisfactory or conflicting interpretations have developed or seem likely to do so. In these circumstances, the UITF issues a 'consensus pronouncement' (or 'abstract'). The ASB considers that compliance with consensus pronouncements forms an important element in deciding whether financial statements give a true and fair view. Consequently, they have the same status as accounting standards and *must* be observed. As of December 2004, 37 UITF abstracts had been issued, of which 27 were still in force. Wherever appropriate, UITFs are included in this book when the topic to which they relate is being discussed.

There is no IASB equivalent of the UITFs.

## 10.16 FRS 1: Cash flow statements

See Chapter 14. The equivalent international standard is IAS 7 (*Cash flow statements*).

## 10.17 FRS 2: Accounting for subsidiary undertakings

See Chapter 26. The equivalent international standards are IAS 27 (*Consolidated and separate financial statements*) and IFRS 3 (*Business combinations*).

## 10.18 FRS 3: Reporting financial performance

See Chapter 11. The equivalent international standards are IAS 1 (*Presentation of financial statements*), IAS 8 (*Accounting policies, changes in accounting estimates and errors*) and IFRS 5 (*Non-current assets held for sale and discontinued*).

## 10.19 FRS 4: Capital instruments

FRS 4 is concerned with accounting for capital instruments by the entities that issue them. A capital instrument is anything issued to raise finance. This includes shares, debentures, loans and debt instruments, and options and warrants that give the holder the right to subscribe for or obtain capital instruments. The term includes those issued by subsidiaries, except when held by another member of the group. Leases, warrants issued under employee share schemes, and equity shares issued as part of a business combination that is accounted for as a merger are not covered by FRS 4, nor are investments in capital instruments issued by other entities.

The objective of FRS 4 is to ensure that financial statements provide a clear, coherent and consistent treatment of capital instruments, in particular in relation to:

- (a) the classification of capital instruments;
- (b) treating the costs associated with capital instruments in a manner consistent with their classification (and allocated to accounting periods on a fair basis over the period the instrument is in issue, in the case of redeemable instruments);
- (c) ensuring that financial statements provide relevant information concerning the nature and amount of the entity's sources of finance and the associated costs, commitments and potential commitments.

All capital instruments should be accounted for in the balance sheet within one of the following categories:

- (a) shareholders' funds;
- (b) liabilities; or, for consolidated financial statements,
- (c) minority interests.

### Shareholders' funds

Shares and warrants should be reported as part of shareholders' funds. When issued, the net proceeds should be reported in the reconciliation of movements in shareholders' funds. When repurchased or redeemed, shareholders' funds should be reduced by the value of the consideration given.

The balance sheet should show the total amount of shareholders' funds, analysed between the amount attributable to non-equity interests (i.e. the aggregate of amounts relating to all classes of non-equity shares and warrants for non-equity shares) and the amount attributable to equity interests (i.e. the difference between total shareholders' funds and the total amount attributable to non-equity interests). When the entitlement to dividends in respect of non-equity shares is calculated by reference to time, the dividends should be reported as appropriations of profit and accounted for on an accruals basis except when ultimate payment is remote (for example, when profits are insufficient to justify a dividend and the dividend rights are non-cumulative). Where the finance costs of non-equity shares are not equal to the dividends, the difference should be accounted for in the profit and loss account as an appropriation of profit. The finance costs for non-equity shares should be calculated on the same basis as the finance costs for debt.

### Liabilities

All capital instruments other than shares should be classified as liabilities if they contain an obligation to transfer economic benefits. Otherwise, they should be reported within shareholders' funds. Convertible debt should be reported within liabilities separately from non-convertible debt. Debt should be analysed on the basis of its maturity distinguishing between debt with up to one year, one to five years, and five or more years to maturity, maturity being determined on the basis of the earliest date on which the lender can require payment.

The finance cost of convertible debt should be calculated on the basis that the debt will never be converted. When converted, the amount recognised in shareholders' funds in respect of the shares issued should be the amount at which the liability for the debt is stated at the date of conversion, and therefore no gain or loss should be recognised.

When issued, debt should be stated at the amount of the net proceeds and its finance cost should be allocated over the term of the debt at a constant rate on the carrying amount, charged in the profit and loss account (unless the entity is an investment company, in which case it may be included in the statement of total gains and losses to the extent that it relates to capital). The carrying amount of debt should be increased by the finance cost in respect of the reporting period and reduced by payments made in respect of the debt in that period. Accrued finance costs may be included in accruals (rather than in the carrying amount of debt) to the extent that the period costs have accrued in one period and will be paid in cash in the next. However, in the event that the debt is repurchased or settled early, any such accrual should be included in the carrying amount of the debt for the purposes of calculating finance costs and gains and losses on the transaction, and any such gains or losses should be recognised in the profit and loss account in the period during which the transaction occurs.

### Minority interests

Where subsidiaries have issued shares outside the group, those shares should be reported as minority interests, unless the group as a whole has an obligation to transfer economic benefit in

connection with the shares. In such cases, they should be accounted for as liabilities within the consolidated financial statements. The amount of minority interests in the balance sheet should be split between the amounts attributable to equity and non-equity interests, the calculation of the amounts attributed to non-equity minority interests (and their associated finance costs) being calculated in the same way as those for non-equity shares. The finance costs associated with such interests should be included in minority interests in the profit and loss account.

The ASB is currently (late 2004) trying to adopt both IAS 32 (*Financial instruments: disclosure and presentation*) and IAS 39 (*Financial instruments: recognition and measurement*) in place of FRS 4 and FRS 13 (see Section 10.28). While it is yet unclear if any differences will exist between the two international standards and the equivalent FRSs, it seems likely that any such differences will be minimal.

## 10.20 FRS 5: Reporting the substance of transactions

The purpose of FRS 5 is to ensure that the substance of an entity's transactions is reported in its financial statements. The commercial effect of the entity's transactions, and any resulting assets, liabilities, gains or losses, should be faithfully represented in its financial statements.

The standard does not apply to:

- (a) forward contracts and futures;
- (b) foreign exchange and interest rate swaps;
- (c) contracts where a net amount will be paid or received based on a movement in a price or an index;
- (d) expenditure commitments and orders placed, until the earlier of delivery or payment;
- (e) employment contracts.

In determining the substance of a transaction, all its aspects and implications should be identified and greater weight given to those more likely to have a commercial effect in practice. Where a group or series of transactions achieves, or is intended to achieve, an overall commercial effect, the transactions should be viewed as a whole, not as individual transactions.

The substance of a transaction depends upon whether it has given rise to new assets or liabilities for the reporting entity and whether it has changed the entity's existing assets and liabilities. An entity has rights or other access to benefits (and therefore has an asset) if the entity is exposed to the risks inherent in the benefits, taking into account the likelihood of those risks having a commercial effect. Evidence that an obligation to transfer benefits (i.e. a liability) exists is shown if there is some circumstance in which the entity cannot avoid, legally or commercially, an outflow of benefits.

Where an asset or a liability results from a transaction, it should be recognised in the balance sheet if there is sufficient evidence of its existence (including, where relevant, any future inflow or outflow of benefit), and if it can be measured at a monetary amount with sufficient reliability.

Where transactions have no significant effect upon either the entity's rights or other access to benefits arising from a previously recognised asset, or to the entity's exposure to the risks inherent in those benefits, the entire asset should continue to be recognised. When the transactions transfer *all* the significant rights or other access to benefits *and all* the significant exposure to risk, the entire asset should cease to be recognised. Where a stage between nil and full effect is found, and it is a significant change, the description or monetary amounts relating to an asset should be changed and a liability recognised for any obligations to transfer benefits that are assumed. However, the standard also states that this partial case arises in only three situations:

- (a) a transfer of only part of the item;
- (b) a transfer of all of the item for only part of its life;
- (c) a transfer of all of the item for all of its life but where the entity retains some significant right to benefits or exposure to risk.

Where a transaction is in substance a financing of a recognised asset (whether previously recognised or not), the finance should be shown deducted from the gross amount of the item it finances on the face of the balance sheet within a single asset caption of 'linked presentation'. The gross amounts of both the item and the finance should be shown on the face of the balance sheet. Profit on a linked presentation should be recognised on entering into the arrangement only to the extent that the non-returnable proceeds received exceed the previous carrying value of the item. Thereafter, any profit or loss arising should be recognised in the period in which it arises, both in the profit and loss account and in the notes.

Assets and liabilities should not be offset, except where they do not constitute separate assets and liabilities.

Where an entity has a quasi-subsiary (i.e. a company, trust, partnership or other vehicle that is directly or indirectly controlled by the reporting entity, but that is not a subsidiary, and which gives rise to benefits for the reporting entity that are in substance no different from those that would arise were the vehicle a subsidiary), the substance of the transactions entered into by the quasi-subsiary should be reported in the consolidated statements. The fact that a quasi-subsiary has been included in the consolidated financial statements should be disclosed and a summary of the financial statements of the quasi-subsiary should be provided in the notes.

Disclosure of a transaction in the financial statements should be sufficient to enable the user of those statements to understand its commercial effect. Where a transaction has resulted in the recognition of assets or liabilities whose nature differs from that of items usually included under the relevant balance sheet heading, the differences should be explained.

There is no directly equivalent international standard, though IAS 1 and IAS 39, for example, cover some of the issues contained in FRS 5.

## 10.21 FRS 6: Acquisitions and mergers

See Chapter 25. IFRS 3 (*Business combinations*) is the international standard which deals with this subject.

## 10.22 FRS 7: Fair values in acquisition accounting

See Chapter 22. IFRS 3 (*Business combinations*) is the international standard which deals with this subject.

## 10.23 FRS 8: Related party disclosures

This FRS requires disclosure of all material related party transactions. The FRS extends the disclosure requirements contained in the Companies Acts, thus providing guidance in an area that had previously not been covered adequately by either statute or the Stock Exchange Rules.

The equivalent international standard is IAS 24 (*Related party disclosures*). There are no major differences between the two standards other than that FRS 8 requires the controlling party to be named.

## 10.24 FRS 9: Associates and joint ventures

See Chapter 26. IAS 28 (*Investments in associates*) is the equivalent international standard on associates and IAS 31 (*Financial reporting of interests in joint ventures*) is the equivalent one dealing with joint ventures.

## 10.25 FRS 10: Goodwill and intangible assets

Although written with a focus upon goodwill arising from the acquisition of a subsidiary undertaking by a parent company that prepares consolidated accounts, the standard also applies to reporting entities acquiring a business or an investment that is accounted for using the equity method (*see* Section 29.8).

A brief summary of the FRS is as follows:

- 1 Positive purchased goodwill should be capitalised as an asset on the balance sheet.
- 2 Internally generated goodwill should not be capitalised.
- 3 An intangible asset acquired as part of the acquisition of a business should be capitalised separately from goodwill, initially at its fair value. Unless the asset has a readily ascertainable market value, the fair value should be limited to an amount that does not create or increase any negative goodwill arising on the acquisition.
- 4 An intangible asset acquired as part of the acquisition of a business whose fair value cannot be measured reliably should be included within the amount of the purchase price attributed to goodwill.
- 5 An intangible asset purchased separately should be capitalised at cost.
- 6 An internally developed intangible asset may be capitalised only if it has a readily ascertainable market value.
- 7 Where goodwill and intangible assets are regarded as having limited useful economic lives, they should be amortised on a systematic basis over those lives.
- 8 Where goodwill and intangible assets are regarded as having indefinite useful economic lives, they should *not* be amortised. A life of longer than 20 years can only be used if the durability of the acquired business or intangible asset can be demonstrated and the goodwill or intangible asset is capable of continued measurement over the period selected. Companies legislation requires goodwill to be amortised over a finite period. When no amortisation occurs, this departure from the legislation must be justified as being required in order to provide a true and fair view.
- 9 The useful economic lives of goodwill and intangible assets should be reviewed at the end of each reporting period and revised if necessary.
- 10 The straight line method of amortisation should be adopted, unless another method can be demonstrated to better reflect the expected pattern of depletion of the goodwill or intangible asset.
- 11 Intangible assets may be revalued but, if one is, all others of the same class must also be revalued. Any revalued intangible assets must be subject to sufficiently frequent further revaluations to ensure that the carrying value does not differ materially from the market value at the balance sheet date.
- 12 Goodwill should not be revalued, except when previous adjustments for impairment losses (that arose, for example, when part of an acquired business was held to have a lower value than had been adopted at the time of acquisition) are reversed and it causes the recoverable amount of the goodwill to rise above its current carrying value. (The same impairment-derived adjustment rules apply to intangible assets.)
- 13 When the fair value of the assets acquired exceed the fair value of the consideration given, the resulting negative goodwill should be recognised and separately disclosed on the face of the balance sheet immediately below the goodwill heading, followed by a sub-total showing the net amount of positive and negative goodwill.

*Note:* In the chapters dealing with consolidated financial statements, a figure for goodwill will often be calculated. It must be borne in mind that this is subject to the contents of FRS 10 just as much as for a company simply buying the business of a sole trader or partnership.

There are two equivalent international standards, IAS 38 (*Intangible assets*) and the relevant disclosure requirements contained in IFRS 3 (*Business combinations*). There are only minor differences between FRS 10 and IFRS 3 – FRS 10 permits use of one indefinite life; IAS 38 does not. IFRS 3 specifies disclosure requirements for business combinations and goodwill.

## 10.26 FRS 11: Impairment of fixed assets and goodwill

This FRS applies to all fixed assets and purchased goodwill that is recognised in the balance sheet except:

- (a) fixed assets within the scope of any FRS addressing disclosures of derivatives and other financial instruments (this is covered by FRS 13: *Derivatives and other financial instruments: disclosures* – see Section 10.28 below);
- (b) investment properties (see Section 10.11 above);
- (c) an entity's own shares held by an ESOP (employee share ownership plan) and shown as a fixed asset in the balance sheet under UITF 13: *Accounting for ESOP trusts*; and
- (d) costs capitalised while a field is being appraised under the Oil Industry Accounting Committee's SORP, *Accounting for oil and gas exploration and development activities*.

Investments in subsidiary undertakings, associates, and joint ventures *do* fall within the scope of FRS 11. However, smaller entities applying the FRSSE are exempt from the FRS.

A brief summary of the FRS is as follows:

- 1 An impairment review should be carried out if events or changes in circumstances indicate that the carrying amount of a fixed asset or of goodwill may not be recoverable.
- 2 Impairment is measured by comparing the carrying value of an asset with its recoverable amount (the higher of its net realisable value and its value in use).
- 3 Impairment losses are recognised in the profit and loss account except that impairment losses on revalued fixed assets are shown in the statement of total recognised gains and losses. Impairments on both unvalued and revalued assets below the depreciated historical cost are recognised in the profit and loss account.
- 4 If the recoverable amount of a previously impaired asset or investment increases because of a change in economic conditions or in the expected use of the asset, the resulting reversal of the impairment loss should be recognised in the current period to the extent that it increases the carrying amount up to the amount that it would have been had the original impairment not occurred. The reversal should be recognised in the profit and loss account unless it arises on a previously revalued fixed asset, in which case it should be recognised in the profit and loss account to the extent that the previous impairment loss (adjusted for subsequent depreciation) was recognised in the profit and loss account, any remaining impairment reversal balance being recognised in the statement of total recognised gains and losses.

IAS 36 (*Impairment of assets*) is the equivalent international standard. There is no significant difference between the requirements of the two standards.

## 10.27 FRS 12: Provisions, contingent liabilities and contingent assets

FRS 12 defines a provision as:

*a liability that is of uncertain timing or amount, to be settled by the transfer of economic benefits.*

A provision should be recognised only when it is probable that a transfer of economic benefits will have to occur and a reasonable estimate can be made of the amount involved.

It defines a contingent liability as:

*either a possible obligation arising from past events whose existence will be confirmed only by the occurrence of one or more uncertain future events not wholly within the entity's control; or a present obligation that arises from past events but is not recognised because it is not probable that a transfer of economic benefits will be required to settle the obligation or because the amount of the obligation cannot be measured with sufficient reliability.*

It defines a contingent asset as:

*a possible asset arising from past events whose existence will be confirmed only by the occurrence of one or more uncertain events not wholly within the entity's control.*

Neither contingent liabilities nor contingent assets should be recognised.

Smaller entities applying the FRSSE are exempt from FRS 12.

The equivalent IAS is IAS 37 (*Provisions, contingent liabilities and contingent assets*). There are no significant differences between the two standards.

## 10.28 FRS 13: Derivatives and other financial instruments: disclosures

A derivative is defined in the standard as:

*a financial instrument that derives its value from the price or rate of some underlying item. Underlying items include equities, bonds, commodities, interest rates, exchange rates, and stock market and other indices.*

The disclosures required by the standard focus mainly upon the risks that arise in connection with financial instruments and how they have been managed. It requires a range of information to be presented concerning the risks arising from the entity's financial instruments, and its attitude and response to those risks. In effect, entities are required to publish in summary form details of their loans, investments and hedging transactions.

Smaller entities applying the FRSSE are exempt from FRS 13.

As with FRS 4, IAS 32 (*Financial instruments: disclosure and presentations*) is set to replace FRS 13. The requirements of FRS 13 are virtually the same as the equivalent requirements of IAS 32. IAS 39 (*Financial instruments: recognition and measurement*) is also relevant to the issues covered by FRS 13.

## 10.29 FRS 14: Earnings per share

The figure for earnings per share is calculated by dividing the net profit or loss attributable to ordinary shareholders by the weighted average number of ordinary shares outstanding during the period.

The FRS prescribes how to adjust the average number of shares when events occur to change the number of ordinary shares, such as bonus issues, share splits, and share consolidations. Students taking examinations which cover FRS 14 in detail should read the actual standard. It contains many examples concerning how the adjustment to the denominator should be made.

Earnings per share (EPS) is a widely used stock market measure. The FRS tries to bring about a more consistent method to aid comparability and reduce misunderstandings.



Basically, EPS is the profit per ordinary share calculated as follows:

	£	£
Profit on ordinary activities after taxation		XXXX
Extraordinary activities (less tax)		XXXX
		XXXX
Less Minority interest (see chapters on group accounts)	XXXX	
Preference dividends	XXXX	
		(XXXX)
Profit available to equity shareholders		XXXX

$$\text{EPS} = \frac{\text{Profit available to equity shareholders}}{\text{Number of ordinary shares}} = \text{EPS in pence}$$

As you will see later, minority interest exists only where the company controls another undertaking, and outsiders own part of that undertaking.

The equivalent international standard is IAS 33 (*Earnings per share*).

## 10.30 FRS 15: Tangible fixed assets

This FRS applies to all tangible fixed assets except investment properties (*see* Section 10.11 above). First, some definitions:

- **Depreciation.** The measure of the cost or revalued amount of the economic benefits of the tangible fixed asset that have been consumed during the period. Consumption includes the wearing out, using up or other reduction in the useful economic life of a tangible fixed asset whether arising from use, effluxion of time or obsolescence through either technology or demand for the goods and services produced by the asset.
- **Useful economic life.** The period over which the entity expects to derive economic benefit from that asset.
- **Residual value.** The net realisable value of an asset at the end of its economic life. Residual values are based on prices prevailing at the date of the acquisition (or revaluation) of the asset and do not take account of expected future price changes.
- **Recoverable amount.** The higher of net realisable value and the amount recoverable from its further use.

Depreciation should be provided in respect of all tangible fixed assets which have a finite useful economic life. It should be provided by allocating the cost (or revalued amount) less net realisable value over the periods expected to benefit from the use of the asset being depreciated. No depreciation method is prescribed, but the method selected should be that which produces the most appropriate allocation of depreciation to each period in relation to the benefit being received in that period through use of the asset. The depreciation should be calculated on the value as shown on the balance sheet and not on any other figure. It *must* be charged against the profit and loss account, *not* against reserves.

When the useful economic life of an asset is longer than 50 years, impairment reviews must be performed so as to ensure that the carrying amount of the asset is not overstated.

Useful economic lives should be reviewed at the end of every reporting period. If it is revised, the carrying amount at the date of the revision should be depreciated over the revised remaining useful economic life of the asset.

The depreciation method may be changed only when to do so will give a fairer presentation of the results and of the financial position. A change in depreciation method does not constitute a change in accounting policy. When the method is changed, the carrying amount should be



depreciated over the remaining useful economic life of the asset, commencing with the period when the change occurred. Where a change of method occurs, the effect, if material, should be shown as a note attached to the financial statements.

UITF Abstract 5, issued in July 1992, introduced rules relating to situations where current assets are included in the balance sheet at the lower of cost and net realisable value. Specifically, it addressed the question of an appropriate transfer value when a current asset becomes a fixed asset through its being retained for use on a continuing basis. (This could arise, for example, when a motor dealer removes a second-hand car from sale and provides it as a company car to the company secretary.) To avoid entities being able to effect transfers from current assets to fixed assets at above net realisable value and subsequently to write down the value through a debit to a revaluation reserve, UITF 5 requires that all such transfers are done at the lower of cost and net realisable value, with any diminution in value at that point being charged in the profit and loss account.

## Asset revaluation

Asset revaluation is permitted and, if a policy of revaluation is adopted, the valuations should be kept up to date. If one asset is revalued, all the assets of that class (i.e. those with a similar nature, function or use) must be revalued.

Revaluation losses caused by use of the asset should be recognised in the profit and loss account. Other revaluation losses should be recognised in the statement of total recognised gains and losses until the carrying amount of the asset is less than the amount the asset would be carried at had depreciated historical cost been adopted rather than asset revaluation.

For example, imagine an asset is revalued from a carrying amount of £20,000 down to £6,000 because the asset had become obsolete. Had it never been revalued, its carrying amount would have been £11,000. The carrying amount of the asset (£6,000) is, therefore, below £11,000 and so the loss on revaluation of £14,000 would be split with £9,000 being recognised in the statement of total recognised gains and losses and £5,000 being recognised in profit and loss.

Revaluation gains should be recognised in the statement of total recognised gains and losses unless they relate to an asset that had previously had revaluation losses charged to the profit and loss account. Where that is the case, the revaluation gain should also be charged to profit and loss, after adjusting for depreciation since the revaluation loss was recognised.

Depreciation should be charged irrespective of when the asset was revalued. An increased value arising from a revaluation does not mean that depreciation should not be charged. The new value is the one on which future depreciation should be based. Depreciation charged before revaluation should not be credited back to profit and loss.

According to paragraph 21 of FRS 3: *Reporting financial performance*, the profit or loss on the disposal of an asset should be accounted for in the profit and loss account of the period in which the disposal occurs as the difference between the net sale proceeds and the net carrying amount, whether carried at historical cost (less any provisions made) or at a valuation.

## Land and buildings

### Freehold land

As this normally lasts for ever there is no need to depreciate, unless subject to depletion or loss of value for reasons which may be applicable in certain circumstances, such as desirability of location, land erosion, extraction of minerals, dumping of toxic waste, etc.

It is rare to encounter circumstances under which freehold land should be subject to depreciation. The problem that most often occurs is the distinction between the cost/value of freehold land and the cost/value of the buildings upon it. FRS 15 states that the distinction should be

made as only the buildings have a limited useful economic life and should be depreciated. Land has an unlimited life and should not be depreciated. Failure to separate the two elements of the cost/value will result in non-compliance with the standard.

## Buildings

These have finite lives and should be depreciated.

## Notes to the financial statements

The FRS requires that the following should be disclosed:

- 1 Methods of depreciation used.
- 2 Useful economic lives or the depreciation rates in use.
- 3 Total depreciation charged for the period.
- 4 Where material, the financial effect of a change in either useful economic lives or estimates of residual values.
- 5 The cost or revalued amount at both the start and end of the accounting period.
- 6 The cumulative amount of provisions for depreciation or impairment at the beginning and end of the financial period.
- 7 A reconciliation of the movements, separately disclosing additions, disposals, revaluations, transfers, depreciation, impairment losses, and reversals of past impairment losses written back in the period.
- 8 The net carrying amount at the beginning and end of the financial period.

The equivalent IASs are IAS 16 (*Property plant and equipment*) and IAS 23 (*Borrowing costs*). Differences between the requirements of FRS 15 and these standards are minimal. IFRS 5 (*Non-current assets held for sale and discontinued operations*) introduced new rules which the ASB are considering adopting for these two special cases.

## 10.31 FRS 16: Current tax

In brief, the FRS requires that:

- 1 Current tax for the period is recognised in the profit and loss account. The only exception is tax on gains and losses that have been recognised in the statement of total recognised gains and losses. Any such tax should be recognised in that statement, not in the profit and loss account.
- 2 Dividends received from UK companies are reported at the net amount received. Dividends received from other countries are reported gross only to the extent that they have suffered a withholding tax.
- 3 Income and expenses subject to non-standard rates of tax (or exempt from tax) should be included in the pre-tax results on the basis of the income or expenses actually receivable or payable, without any adjustment to reflect a notional amount of tax that would have been paid or relieved in respect of the transaction if it had been taxable, or allowable for tax purposes, on a different basis.
- 4 Current tax should be measured using tax rates and laws that have been enacted or substantively enacted by the balance sheet date.

IAS 12 (*Income taxes*) is the equivalent international standard. The main differences between them are that IAS 12 makes no reference to tax on dividends but it does require any tax expense on discontinuing operations to be disclosed and it does require that current tax be presented *separately* in the balance sheet.

## 10.32 FRS 17: Retirement benefits

The objective of FRS 17 is that the employer should recognise the expected cost of providing pensions on a 'systematic and rational basis' over the period during which he/she derives benefit from the employees' services. The main requirements are as follows:

- 1 Pension scheme assets are measured using market values.
- 2 Pension scheme liabilities are measured using a projected unit method and discounted at an AA corporate bond rate.
- 3 The pension scheme surplus (to the extent it can be recovered) or deficit is recognised in full on the balance sheet.
- 4 The movement in the scheme surplus/deficit is analysed into:
  - (a) the current service cost and any past service costs; these are recognised in operating profit
  - (b) the interest cost and expected return on assets; these are recognised as other finance costs
  - (c) actuarial gains and losses; these are recognised in the statement of total recognised gains and losses.

IAS 19 (*Employee benefits*) is the equivalent international standard. The ASB are currently (December 2004) considering whether to adopt its requirements, which differ significantly in some aspects.

## 10.33 FRS 18: Accounting policies

This standard was covered in Section 10.5 above.

## 10.34 FRS 19: Deferred tax

This FRS is covered in Chapter 7. The equivalent international standard is IAS 12 (*Income taxes*), which is also the equivalent international standard for FRS 16. IAS 12 differs from FRS 19 by requiring deferred tax to be provided when assets are revalued and prohibiting the discounting of future deferred tax liabilities.

## 10.35 FRS 20: Share-based payment

This standard was issued in April 2004, replacing UITF 17. Its requirements are identical to those of IFRS 2 (*Share-based payment*), except that FRS 20 includes an exemption for entities applying the FRSSE.

Under FRS 20, share-based payments must be recognised as an expense, measured at fair value which should be based on market prices and should take into account the terms and conditions upon which the instruments were granted. The standard gives the accounting treatment to be adopted and disclosures to be made by entities making such payments.

FRS 20 identifies three types of share-based payment transaction:

- (a) equity-settled share-based payment transactions. These are transactions in which the entity receives goods or services as consideration for equity instruments of the entity;
- (b) cash-settled share-based payment transactions. These are transactions in which the entity acquires goods or services by incurring liabilities to the supplier of those goods or services for amounts that are based on the price (or value) of the entity's equity instruments;

- (c) transactions in which the entity receives or acquires goods or services and the terms of the arrangement provide one or other of the parties to the transaction with a choice as to whether the transaction is settled in cash or by issuing equity instruments.

Examples of share-based payments include:

- (a) all types of executive share option and share purchase plans and employee share option and share purchase schemes, including Save-As-You-Earn (SAYE) plans and similar arrangements;
- (b) arrangements such as share appreciation rights, where a cash payment is made, the amount of which depends on the share price; and
- (c) transactions with suppliers of goods or non-employee services that involve share-based payments being made in exchange for those goods or services.

## 10.36 FRS 21: Events after the balance sheet date

This standard was issued in May 2004, replacing SSAP 17. Its requirements are identical to those of IAS 10 (*Events after the balance sheet date*), except that FRS 21 includes an exemption for entities applying the FRSSE.

Obviously, any event which occurred during a financial period will have been taken into account when the financial statements were prepared. Generally, once financial statements have been approved and authorised for issue, it becomes impossible to alter them. However, during the period between the balance sheet date and the date when the financial statements are authorised for issue, events may arise which throw some light upon the valuation of assets or amounts of liabilities in those financial statements. FRS 21 directs its attention to such events during this period.

To clarify the period involved, entities must report the date on which their financial statements were authorised for issue. For companies, this *is not* the date when they are presented to the shareholders at the AGM. Rather, it is the date on which the directors authorised the financial statements to be issued.

Two terms are of particular importance in applying the requirements of FRS 21: 'adjusting events' and 'non-adjusting events'.

### Adjusting events

These are events which provide evidence of conditions that existed at the balance sheet date for which the entity shall adjust the amounts recognised in its financial statements or recognise items that were not previously recognised. Examples include:

- The settlement after the balance sheet date of a court case that confirms the liability of the entity at the balance sheet date.
- The discovery after the balance sheet date of errors or frauds which show that the financial statements were incorrect.
- Information received after the balance sheet date that indicates that the value of an asset was impaired (i.e. less than previously believed) at the balance sheet date. This could arise in many ways, for example:
  - (a) **Fixed assets.** The subsequent determination of the purchase price or of the proceeds of sale of assets purchased or sold before the year end.
  - (b) **Property.** A valuation which provides evidence of a permanent diminution in value.
  - (c) **Investments.** The receipt of a copy of the financial statements or other information in respect of an unlisted company which provides evidence of a permanent diminution in the value of a long-term investment.

**(d) Stocks and work in progress:**

- (i) the receipt of proceeds of sales after the balance sheet date or other evidence concerning the net realisable value of stocks;
- (ii) the receipt of evidence that the previous estimate of accrued profit on a long-term contract was materially inaccurate.

**(e) Debtors.** The renegotiation of amounts owing by debtors, or the insolvency of a debtor.

### Non-adjusting events

These are events which arise after the balance sheet date and concern conditions which did not exist at that time. Consequently they do not result in changes in amounts in financial statements. They may, however, be of such materiality that their disclosure is required by way of notes to ensure that the financial statements are not misleading. Such disclosure should describe the nature of the event and an estimate of its financial effect (or a statement that it is not possible to do so).

Examples of non-adjusting events given in IAS 10 which may require disclosure include:

- a decline in market value of investments between the balance sheet date and the date when the financial statements are authorised for issue;
- a major business combination after the balance sheet date or disposing of a major subsidiary;
- announcing a plan to discontinue an operation, disposing of assets or settling liabilities attributable to a discontinuing operation or entering into binding agreements to sell such assets or settle such liabilities;
- major purchases and disposals of assets, or expropriation of major assets by government;
- the destruction of a major production plant by a fire after the balance sheet date;
- announcing, or commencing the implementation of, a major restructuring;
- major ordinary share transactions and potential ordinary share transactions after the balance sheet date;
- abnormally large changes after the balance sheet date in asset prices or foreign exchange rates;
- changes in tax rates or tax laws enacted or announced after the balance sheet date that have a significant effect on current and deferred tax assets and liabilities;
- entering into significant commitments or contingent liabilities, for example, by issuing significant guarantees;
- commencing major litigation arising solely out of events that occurred after the balance sheet date.

The standard makes it clear that dividends proposed or declared after the balance sheet date *are not* to be treated as a liability in the balance sheet. Rather, they are to be disclosed in a note to the financial statements.

## 10.37 FRSSE: Financial Reporting Standard for Smaller Entities

The FRSSE was first issued in November 1997 and has been updated regularly thereafter. It may be applied to all financial statements intended to give a true and fair view of the financial position and profit or loss (or income and expenditure) of all entities that are small companies or groups or entities (other than building societies) that would be classified as such were they incorporated under companies legislation.

Small companies are defined in the FRSSE according to the definition contained in sections 247 and 247A of the Companies Act 1985 as being those that in a year satisfy at least two of the following:

- 1 Turnover no greater than £2.8 million.
- 2 A balance sheet total no greater than £1.4 million.
- 3 An average of no more than 50 employees.

Other than in the case of newly incorporated companies, the condition must have been satisfied in two of the last three years. For small groups, the threshold limits are aggregate turnover not exceeding £2.8 million ‘net’ (i.e. after set-offs and other adjustments required by Schedule 4A of the Companies Act 1985) or £3.6 million ‘gross’ (i.e. before the set-offs and adjustments); aggregate balance sheet total not exceeding £1.4 million net, £1.68 million gross; and aggregate number of employees not exceeding 50. (Companies Act 1985, Sections 248 and 249.)

Application of the FRSSE is voluntary – reporting entities may choose instead to apply all the other accounting standards and UITFs. Those that do apply it are exempt from complying with the other accounting standards and UITFs.

The FRSSE contains a simplified, but lengthy, set of requirements derived from those included in all the other standards and UITFs. It would not be appropriate to describe these in detail here. For information concerning the precise contents of the FRSSE, reference should be made to the FRSSE itself or to a book specialising in accounting standards.

There is no equivalent international standard as of December 2004. However, the IASB is currently considering the introduction of a standard in this area. At present, it is considering:

- (a) using a ‘lack of public accountability’ rather than size of organisation to determine whether an entity may use it;
- (b) a suite of special standards, one for each IFRS/IAS rather than one global FRSSE;
- (c) mandatory use of full standards when an issue is not addressed in the relevant small entity standard – the FRSSE recommends but does not prescribe such an action;
- (d) the choice between use of each small entity standard and the full IFRS/IAS, meaning that entities could use a mixture of the two types of standards – the FRSSE has to be either adopted in its entirety or not.

## 10.38 Equivalent international standards

### Exhibit 10.2

#### UK standard

SSAP 4 – Accounting for government grants  
 SSAP 5 – Accounting for value added tax  
 SSAP 9 – Stocks and long-term contracts  
 SSAP 13 – Accounting for research and development  
 SSAP 19 – Accounting for investment properties  
 SSAP 20 – Foreign currency translation  
 SSAP 21 – Accounting for leases and hire purchase contracts  
 SSAP 25 – Segmental reporting  
 FRS 1 – Cash Flow Statements  
 FRS 2 – Accounting for Subsidiary Undertakings  
 FRS 3 – Reporting Financial Performance  
 FRS 4 – Capital Instruments  
 FRS 5 – Reporting the Substance of Transactions

#### International standard

IAS 20 – Accounting for Government Grants and Disclosure of Government Assistance  
 none  
 IAS 11 – Construction Contracts *and* IAS 18 Revenue  
 IAS 38 – Intangible Assets  
 IAS 40 – Investment Property  
 IAS 21 – The Effects of Changes in Foreign Exchange Rates *and* IAS 29 Financial Reporting in Hyperinflationary Economies  
 IAS 17 – Leases  
 IAS 14 – Segment Reporting  
 IAS 7 – Cash Flow Statements  
 IAS 27 – Consolidated and Separate Financial Statements *and* IFRS 3 Business Combinations  
 IAS 1 – Presentation of Financial Statements  
 IAS 32 – Financial Instruments: Disclosure and Presentation *and* IAS 39 Financial Instruments: Recognition and Measurement  
 IAS 1 – Presentation of Financial Statements *and* IAS 39 Financial Instruments: Recognition and Measurement, *and others*



**UK standard**

FRS 6 – Acquisitions and Mergers  
 FRS 7 – Fair Values in Acquisition Accounting  
 FRS 8 – Related Party Disclosures  
 FRS 9 – Associates and Joint Ventures  
 FRS 10 – Goodwill and Intangible Assets  
 FRS 11 – Impairment of Fixed Assets and Goodwill  
 FRS 12 – Provisions, Contingent Liabilities and Contingent Assets  
 FRS 13 – Derivatives and other Financial Instruments: Disclosures  
 FRS 14 – Earnings per Share  
 FRS 15 – Tangible Fixed Assets  
  
 FRS 16 – Current Tax  
 FRS 17 – Retirement Benefits  
 FRS 18 – Accounting Policies  
  
 FRS 19 – Deferred Tax  
 FRS 20 – Share-based Payment  
 FRS 21 – Events after the Balance Sheet Date  
  
 FRSSE – Financial Reporting Standard for Smaller Entities

**International standard**

IFRS 3 – Business Combinations  
 IFRS 3 – Business Combinations  
 IAS 24 – Related Party Disclosures  
 IAS 28 – Investments in Associates *and* IAS 31 Interests in Joint Ventures  
 IAS 38 – Intangible Assets *and* IFRS 3 Business Combinations  
 IAS 36 – Impairment of Assets  
 IAS 37 – Provisions, Contingent Liabilities and Contingent Assets  
  
 IAS 32 – Financial Instruments: Disclosure and Presentation  
  
 IAS 33 – Earnings per Share  
 IAS 16 – Property, Plant and Equipment, IAS 23 Borrowing Costs, *and* IFRS 5 Non-current Assets Held for Sale and Discontinued Operations  
 IAS 12 – Income Taxes  
 IAS 19 – Employee Benefits  
 IAS 1 – Presentation of Financial Statements *and* IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors  
 IAS 12 – Income Taxes  
 IFRS 2 – Share-based Payment  
 IAS 10 – Events After the Balance Sheet Date  
  
 none

Information on the latest developments in UK and international standards can be found in the ASB's quarterly publication, *Inside Trade*. It can be found at [www.asb.co.uk/asb/publications](http://www.asb.co.uk/asb/publications). The IASB website is [www.iasb.org](http://www.iasb.org).

## Learning outcomes

You should now have learnt:

- 1 That accounting standards have statutory recognition and must, therefore, be complied with when preparing financial statements intended to present a true and fair view.
- 2 That the *Statement of Principles* provides details of the concepts that underpin accounting standards.
- 3 That as of December 2004, there were 30 accounting standards (8 SSAPs, 21 FRSs and 1 FRSSE), 27 UITF abstracts and 36 international standards (5 IFRSs and 31 IASs) in force.
- 4 About the main requirements of a range of accounting standards.
- 5 Which international standards address the issues contained in the UK accounting standards.

## Answers to activities

- 10.1** Apart from the legal requirement that certain companies switch to international standards, international accounting standards are becoming increasingly adopted across the world. At the same time, there is an increasing internationalisation of business and a need for greater international uniformity in the regulations underpinning the preparation of company financial statements, particularly for multinational companies.



**10.2** Most non-accountants assume that the information in financial statements is accurate, correct and free of bias. They believe this to be the case because they assume that all such information is based on firm facts – for example, what something cost is shown in the invoice and confirmed by the amount paid for it as shown in the bank statement. They do not realise that many of the figures shown are based on estimates and subject to the subjective interpretation of a situation by the person preparing the financial statements. They are unaware that accountants have many choices to make, so much so that it is unlikely that two accountants would ever produce identical financial statements for any but the smallest of organisations.

By placing an emphasis on the qualitative aspects of information, the *Statement of Principles* seeks to restrict diversity in the range of options open to the preparers of financial statements and so guide them towards a more uniform interpretation of the options available to them, thereby increasing the level of faith that users of those statements may have in the information they contain.

## Review questions

**10.1** In preparing its accounts for the year to 31 May 20X7, Whiting plc had been faced with a number of accounting problems, the details of which were as follows:

- (i) The company had closed down its entire American operations which represented a significant part of Whiting plc's business.
- (ii) The corporation tax for the year to 31 May 20X6 had been over-provided by £5,000.
- (iii) Land and buildings had been revalued at an amount well in excess of the historic cost (note: the current value is to be adjusted in the financial statements).
- (iv) A trade debtor had gone into liquidation owing Whiting plc an amount equivalent to 20 per cent of Whiting's turnover for the year. It is highly unlikely that any of this debt will ever be repaid.
- (v) During the year, the company changed its method of valuing stock. If the same method had been adopted in the previous year, the profits for that year would have been considerably less than had previously been reported.

### Required:

- (a) Being careful to give your reasons, explain how each of the above matters should be treated in the financial statements of Whiting plc for the year to 31 May 20X7 if the company follows the requirements of FRS 3.
- (b) Outline the provisions of FRS 10 (*Goodwill and intangible assets*) for the treatment of both non-purchased and purchased goodwill in the balance sheets of companies and groups of companies.

(Association of Accounting Technicians)

**10.2** The directors are preparing the published accounts of Dorman plc for the year to 31 October 20X5. The following information is provided for certain of the items which are to be included in the final accounts.

- (i) *Stocks of raw material, monolite:*

	£
Cost	26,500
Replacement cost	48,100

- (ii) *Stocks of finished goods:*

	Paramite £	Paraton £
Direct costs	72,600	10,200
Proportion of fixed factory overhead	15,300	4,600
Proportion of selling expenses	6,870	1,800
Net realisable value	123,500	9,520





- (iii) *Plant and machinery.* An item of plant was shown in the 20X4 accounts at a net book value of £90,000 (£160,000 cost less accumulated depreciation £70,000). The plant was purchased on 1 November 20X2 and has been depreciated at 25 per cent reducing balance. The directors now consider the straight line basis to be more appropriate: they have estimated that at 1 November 20X4 the plant had a remaining useful life of six years and will possess zero residual value at the end of that period.
- (iv) *Freehold property.* The company purchased a freehold property for £250,000 11 years ago, and it is estimated that the land element was worth £50,000 at that date.  
The company has never charged depreciation on the property but the directors now feel that it should have done so; the building is expected to have a total useful life of 40 years.
- (v) *Research expenditure* incurred in an attempt to discover a substitute for raw materials currently purchased from a politically sensitive area of the world amounted to £17,500 during the year.
- (vi) *Development expenditure* on Tercil, which is nearly ready for production, amounted to £30,000. Demand for Tercil is expected significantly to exceed supply for at least the next four years.
- (vii) *Accident.* On 1 December 20X5 there was a fire in the warehouse which damaged stocks, other than the items referred to in (i) and (ii) above. The book value of these stocks was £92,000. The company has discovered that it was underinsured and only expects to recover £71,000 from the insurers.
- (viii) *Investments.* Dorman purchased 30,000 ordinary shares in Lilleshall Ltd on 1 November 20X4 for £96,000, and immediately succeeded in appointing two of its directors to Lilleshall's board. The issued share capital of Lilleshall consists of 100,000 ordinary shares of £1 each. The profits of Lilleshall for the year to 31 October 20X5 amounted to £40,000. (Ignore taxation.)

**Required:**

Explain how each of the above items should be dealt with in the published financial statements of Dorman plc.

*(Institute of Chartered Secretaries and Administrators)*

**10.3A** In preparing the published financial statements of a company, briefly state the significant accounting/disclosure requirements you would have in mind in ensuring that the financial statements comply with best accounting practice as embodied in accounting standards concerning:

- (a) Value added tax.
- (b) Earnings per share.
- (c) The disclosure requirements of each major class of depreciable assets.
- (d) Research expenditure.
- (e) Capital-based grants relating to fixed assets.
- (f) Goodwill on consolidation.
- (g) The disclosure requirements relating to generally accepted fundamental accounting concepts.
- (h) The accounts of a subsidiary undertaking having similar activities to that of the parent undertaking.

*(Association of Accounting Technicians)*

**10.4A** Oldfield Enterprises Limited was formed on 1 January 20X5 to manufacture and sell a new type of lawn mower. The bookkeeping staff of the company have produced monthly figures for the first ten months to 31 October 20X5 and from these figures together with estimates for the remaining two months, Barry Lamb, the managing director, has drawn up a forecast profit and loss account for the year to 31 December 20X5 and a balance sheet as at that date.

These statements together with the notes are submitted to the board for comment. During the board meeting discussion centres on the treatment given to the various assets. The various opinions are summarised by Barry Lamb who brings them, with the draft accounts, to you as the company's financial adviser.

**Oldfield Enterprises Ltd**  
**Draft Profit and Loss Account for the year to 31 December 20X5**

	£000	£000
Sales		3,000
Cost of sales		1,750
		<u>1,250</u>
Gross profit		
Administration overheads	350	
Selling and distribution overheads	<u>530</u>	
		<u>880</u>
Net profit before taxation		<u><u>370</u></u>

**Draft Balance Sheet at 31 December 20X5**

	Cost £000	Depreciation and amortisation £000	Net £000
<i>Fixed assets – tangible</i>			
Leasehold land and buildings	375	125	250
Freehold land and buildings	350	–	350
Plant and machinery	<u>1,312</u>	<u>197</u>	<u>1,115</u>
	<u><u>2,037</u></u>	<u><u>322</u></u>	<u>1,715</u>
<i>Fixed assets – intangible</i>			
Research and development			375
<i>Current assets</i>			
Stock		375	
Debtors		<u>780</u>	
		1,155	
<i>Current liabilities</i>			
Creditors	250		
Bank overdraft	<u>125</u>	<u>375</u>	
			<u>780</u>
			<u><u>2,870</u></u>
Share capital			2,500
Net profit for year			<u>370</u>
			<u><u>2,870</u></u>

**Notes:**

- (a) Administration overheads include £50,000 written-off research and development.  
 (b) The lease is for 15 years and cost £75,000. Buildings have been put up on the leasehold land at a cost of £300,000. Plant and machinery has been depreciated at 15 per cent. Both depreciation and amortisation are included in cost of sales.

**Opinions put forward**

**Leasehold land and buildings:**

The works director thinks that although the lease provides for a rent review after three years the buildings have a 50-year life. The buildings should therefore be depreciated over 50 years and the cost of the lease should be amortised over the period of the lease.

The managing director thinks that because of the rent review clause the whole of the cost should be depreciated over three years.

The sales director thinks it is a good idea to charge as much as the profits will allow in order to reduce the tax bill.

**Freehold land and buildings:**

The works director thinks that as the value of the property is going up with inflation no depreciation is necessary.



The sales director's opinion is the same as for leasehold property.

The managing director states that he has heard that if a property is always kept in good repair no depreciation is necessary. This should apply in the case of his company.

*Plant and machinery:*

The managing director agrees with the 15 per cent for depreciation and proposes to use the reducing balance method.

The works director wants to charge 25 per cent straight line.

*Research and development:*

The total spent in the year will be £425,000. Of this £250,000 is for research into the cutting characteristics of different types of grass, £100,000 is for the development of an improved drive system for lawn mowers and £75,000 is for market research to determine the ideal lawn mower characteristics for the average garden.

The managing director thinks that a small amount should be charged as an expense each year.

The works director wants to write off all the market research and 'all this nonsense of the cutting characteristics of grass'.

The sales director thinks that, as the company has only just started, all research and development expenditure relates to future sales so all this year's expenditure should be carried forward.

*Stock:*

Both the managing director and the works director are of the opinion that stock should be shown at prime cost.

The sales director's view is that stocks should be shown at sales price as the stock is virtually all sold within a very short period.

**Required:**

- (a) You are asked to comment on each opinion stating what factors should be taken into account to determine suitable depreciation and write-off amounts.
- (b) Indicate what amounts should, in your opinion, be charged to profit and loss and show the adjusted profit produced by your recommendations, stating clearly any assumptions you may make.

*(Association of Chartered Certified Accountants)*

**10.5** The accountant of Hook, Line and Sinker, a partnership of seven people, has asked your advice in dealing with the following items in the partnership accounts for the year to 31 May 20X7.

- (a) (i) Included in invoices prepared and dated in June 20X7 were £60,000 of goods despatched during the second half of May 20X7.
- (ii) Stocks of components at 31 May 20X7 include parts no longer used in production. These components originally cost £50,000 but have been written down for purposes of the accounts to £25,000. Scrap value of these items is estimated to be £1,000. Another user has expressed interest in buying these parts for £40,000.
- (b) After May 20X7 a customer who accounts for 50 per cent of Hook, Line and Sinker sales suffered a serious fire which has disrupted his organisation. Payments for supplies are becoming slow and Hook, Line and Sinker sales for the current year are likely to be substantially lower than previously. This customer owed £80,000 to Hook, Line and Sinker at 31 May 20X7.
- (c) During the year to 31 May, Hook, Line and Sinker commenced a new advertising campaign using television and expensive magazine advertising for the first time. Sales during the year were not much higher than previous years as the partners consider that the effects of advertising will be seen in future years.

Expenditure on advertising during the year is made up of:

	£
Television	50,000
Advertisements in magazines	60,000
Advertisements in local papers	25,000

All the expenditure has been treated as expense in the accounts but the partners wish to carry forward three-quarters of the television and magazine costs as it is expected that this cost will benefit future years' profits and because this year's profits will compare unfavourably with previous years if all the expenditure is charged in the accounts.

- (d) Three projects for the construction of sinkers have the following cost and revenue characteristics:

	<i>Project A</i>	<i>Project B</i>	<i>Project C</i>
Degree of completion	75%	50%	15%
	£	£	£
Direct costs to date	30,000	25,000	6,000
Sales price of complete project	55,000	50,000	57,500
Overheads allocated to date	4,000	2,000	500
Costs to complete – Direct	10,000	25,000	40,000
– Overheads	2,000	2,000	3,000

No profits or losses have been included in the accounts.

- (e) After considerable discussion with management, the sales of a newly developed special purpose hook have been given the following probabilities:

<i>First year of production</i>	
<i>Sales</i>	<i>Probability</i>
£	
15,000	0.2
30,000	0.5
40,000	0.3
<i>Second year of production</i>	
<i>Increase over first year</i>	<i>Probability</i>
£	
10,000	0.1
20,000	0.5
30,000	0.4

Second year sales may be assumed independent of first year levels.

Cost–volume–profit analysis shows that the breakeven point is £50,000.

Production of the special purpose hook started prior to the end of the accounting year and stocks of the finished product are included at cost amounting to £20,000. It has been decided that if there is less than 0.7 probability of breakeven being reached in the second year then stocks should be written down by 25 per cent.

- (f) During the year it was discovered that some stock sheets had been omitted from the calculations at the previous year end. The effect is that opening stock for the current year, shown as £35,000, should be £42,000. No adjustment has yet been made.

#### Required:

Discuss the treatment of each item with reference to relevant accounting standards and accounting concepts and conventions. Recommend the appropriate treatment for each item showing the profit effect of each recommendation made.

(Association of Chartered Certified Accountants)

**10.6** The chief accountant of Uncertain Ltd is not sure of the appropriate accounting treatment for a number of events occurring during the year 20X5/6.

- A significant number of employees have been made redundant, giving rise to redundancy payments of £100,000 which have been included in manufacturing cost of sales.
- One of Uncertain Ltd's three factories has been closed down. Closure costs amounted to £575,000. This amount has been deducted from reserves in the balance sheet.



- (iii) The directors have changed the basis of charging depreciation on delivery vehicles. The difference between the old and new methods amounts to £258,800. This has been charged as a prior period adjustment.
- (iv) During October 20X6 a fire occurred in one of the remaining factories belonging to Uncertain Ltd and caused an estimated £350,000 of additional expenses. This amount has been included in manufacturing cost of sales.
- (v) It was discovered on 31 October 20X6 that a customer was unable to pay his debt to the company of £125,000. The £125,000 was made up of sales in the period July to September 20X6. No adjustment has been made in the draft accounts for this item.

**Uncertain Ltd**  
**Draft Profit and Loss Account for the year ended 30 September 20X6**

	£	£
Sales		5,450,490
Manufacturing cost of sales		<u>3,284,500</u>
Gross profit		2,165,990
Administration expenses	785,420	
Selling expenses	<u>629,800</u>	
		(1,415,220)
		<u>750,770</u>
Corporation tax (50%)		(375,385)
		375,385
Proposed dividend on ordinary shares		(125,000)
		250,385
Prior period adjustment	258,800	
Corporation tax	<u>(129,400)</u>	
		(129,400)
		<u><u>120,985</u></u>

**Required:**

- (a) Write a report to the chief accountant of Uncertain Ltd with suggestions for appropriate treatment for each of the items (i) to (iv), with explanations for your proposals.
- (b) Amend the draft profit and loss account to take account of your proposals.

*(Association of Chartered Certified Accountants)*

**10.7** With reference to FRS 21: *Events after the balance sheet date* and FRS 12: *Provisions, contingent liabilities and contingent assets*:

- (a) define the following terms:
  - (i) post-balance sheet events
  - (ii) adjusting events
  - (iii) non-adjusting events
  - (iv) contingent asset/liability;
- (b) give FOUR examples of adjusting events, and FOUR examples of non-adjusting events; and
- (c) state how
  - (i) a material contingent liability, and
  - (ii) material contingent assets should be accounted for in financial statements.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# The financial statements of limited companies: profit and loss accounts, related statements and notes

## Learning objectives

After you have studied this chapter, you should be able to:

- state how the Companies Act defines company size
- explain the alternative presentation formats available under the Companies Acts that must be used when preparing profit and loss accounts for external reporting purposes
- explain how to present financial information under the most commonly used Companies Act format
- describe the differences between the most commonly used statutory financial statement format and the formats generally adopted for internal use
- describe the FRS 3 requirements that relate to the profit and loss account concerning:
  - continuing operations
  - acquisitions
  - discontinued operations
  - sale or termination of an operation
  - reorganisation and restructuring costs
  - profits and losses on disposal of fixed assets
  - exceptional and extraordinary items
  - prior period adjustments
- describe the impact of FRS 3 upon the Companies Act format
- describe the format of the statement of total recognised gains and losses
- describe the format of the note of historical cost profits and losses

## Introduction

In this chapter, you'll learn about the way in which accounting standards and the Companies Acts govern the presentation of information in published company financial statements.

## 11.1 Background

When a company draws up its own financial statements, purely for internal use by directors and the management, it can adopt any format it wishes. It can, for example, switch the order of items in the balance sheet, combine items that are never combined when official formats are used, and use its own terminology in place of normal accounting terminology. There are no rules which must be followed when preparing accounting information for internal use. Drawing up a trading and profit and loss account and balance sheet for a company's own use is not, therefore, necessarily the same as drawing up such financial statements for other purposes.

If an organisation wishes to charge something in the trading account that, in theory, ought to be shown in the profit and loss account, there is nothing to prevent it from doing so. On the other hand, students sitting an exam and accountants preparing financial statements for publication must base their work on accounting theory and accounting rules and regulations, *not* on the internal reporting practices of an organisation.

When it comes to publication, i.e. when the financial statements are sent to the shareholders or to the Registrar of Companies, the Companies Acts lay down the information which must be shown, and also how it should be shown. Prior to 1981, provided the necessary information was shown, it was up to each company to decide how it wanted to present it. The provisions of the 1981 Act brought the UK into line with the Fourth Directive of the EC, and the freedom previously available to companies on how to show the information was removed. There are, however, some advantages to be gained from such standardisation.

### Activity 11.1

What do you think these advantages may be?

## 11.2 Financial statement formats

The Companies Acts give companies the choice of two alternative formats (layouts) for balance sheets, and four alternative formats for profit and loss accounts. We are going to focus on the most commonly used of these formats. If you need to know the layouts prescribed by the other formats, they are readily available in the Companies Acts themselves.

We are going to approach this topic, first, by presenting you with a profit and loss account produced for use within a company (an 'internal' profit and loss account) which can easily be adapted to cover publication requirements under the Companies Acts, along with an 'internal' balance sheet.

### Activity 11.2

The reason for taking this approach ought to be fairly obvious. What do you think it is?

All companies, even the smallest, have to produce financial statements for their shareholders that adhere to the requirements of the Companies Acts. 'Small' and 'medium-sized' companies can, however, file summarised financial statements with the Registrar of Companies, but they must still prepare a full set of financial statements for their shareholders. In addition, listed companies may send their shareholders summary financial statements in place of the full version, but each shareholder has the right to request a full version and, typically, many do.

The Companies Act definition of 'small-' and 'medium-sized' companies is that, for the financial year in question and the previous year, the company is defined as 'small-' or 'medium-sized' if it lies within the limits of at least two of the following three criteria:

	<i>Small</i>	<i>Medium-sized</i>
Turnover not more than	£2.8 million	£11.2 million
Balance sheet total not more than	£1.4 million	£5.6 million
Employees not more than	50	250

Of the four Companies Act formats which could be used, the format we will use in this book for the published profit and loss account is called Format 1.

### 11.3 Format 1

The Companies Acts show Format 1 as in Exhibit 11.1.

#### Exhibit 11.1

##### Profit and loss account – Format 1

- 1 Turnover
- 2 Cost of sales
- 3 Gross profit or loss
- 4 Distribution costs
- 5 Administrative expenses
- 6 Other operating income
- 7 Income from shares in group undertakings
- 8 Income from participating interests
- 9 Income from other fixed asset investments
- 10 Other interest receivable and similar income
- 11 Amounts written off investments
- 12 Interest payable and similar charges
- 13 Tax on profit or loss on ordinary activities
- 14 Profit or loss on ordinary activities after taxation
- 15 Extraordinary income
- 16 Extraordinary charges
- 17 Extraordinary profit or loss
- 18 Tax on extraordinary profit or loss
- 19 Other taxes not shown under the above items
- 20 Profit or loss for the financial year

It is presented as a list and does not show where subtotals should be placed. The important point is that items 1 to 20 have to be displayed in that order. If some items do not exist for the company in a given year, then those headings are omitted from the published profit and loss account. Thus, if the company has no investments, items 7, 8, 9, 10 and 11 will not appear in its published profit and loss account, and item 6 will be followed by item 12. The category reference numbers on the left-hand side of items are normally omitted from the published profit and loss account.

### 11.4 Financial statements for internal use

Exhibit 11.2 shows a trading and profit and loss account drawn up for internal use by a company. As mentioned earlier, there are no statutory rules concerning how financial statements are drawn up for internal use. However, as you learnt in Activity 11.2, if the internal financial statements were drawn up in a completely different fashion from those needed for publication, then there would be quite a lot of work needed in order to reassemble the figures into a profit and loss account for publication.



**Exhibit 11.2 Financial statements for internal use**

Block plc			
Trading and Profit and Loss Account for the year ended 31 December 20X6			
	£000	£000	£000
(1) Turnover			800
Less Cost of sales:			
Stock 1 January 20X6		100	
Add Purchases		525	
		625	
Less Stock 31 December 20X6		(125)	
			(500)
(2) Gross profit			300
(3) Distribution costs			
Salaries and wages	30		
Motor vehicle costs: Distribution	20		
General distribution expenses	5		
Depreciation: Motors	3		
Machinery	<u>2</u>		
		60	
(4) Administrative expenses			
Salaries and wages	25		
Motor vehicle costs: Administration	2		
General administration expenses	7		
Auditors' remuneration	2		
Depreciation: Motors	3		
Machinery	<u>1</u>		
		40	
(5)			(100)
			200
(6) Other operating income			30
			230
(7) Income from shares in group undertakings		20	
(8) Income from participating interests		10	
(9) Income from shares from non-related companies		5	
(10) Other interest receivable		<u>15</u>	
			50
			280
(11) Amounts written off investments		4	
Interest payable			
Loans repayable within five years	10		
Loans repayable in ten years	<u>6</u>		
(12)		<u>16</u>	
			( 20)
Profit on ordinary activities before taxation			260
(13) Tax on profit on ordinary activities			( 95)
(14) (20) Profit on ordinary activities after taxation			165
Retained profits brought forward from last year			60
			225
Transfer to general reserve		40	
Proposed ordinary dividend		<u>100</u>	
			(140)
Retained profits carried forward to next year			<u>85</u>

In Exhibit 11.2, the internal profit and loss account has been prepared using a format which makes it much easier to get the figures for the published profit and loss account. Examination questions on this topic sometimes ask for both (a) internal and (b) published financial statements. You should find things are easier if the internal and published financial statements follow a similar format.

To help you see how this internal format follows the one for publication, the line numbers from the Companies Act format are shown in brackets. Do *not* include these numbers when preparing 'internal' financial statements.

## 11.5 Financial statements for publication

Note that there are no items in Exhibit 11.2 that would appear under items 15 to 19 in Companies Act Format 1 and that, as a result, items 14 and 20 are represented by the same figure. Exhibit 11.3 redrafts Exhibit 11.2 into a form suitable for publication according to Format 1. However, as before, the category reference numbers to the left-hand side of Exhibit 11.3 are for your benefit only; they do not have to be included. You will see that the main difference between the two exhibits is that the detail between each entry has been removed. Such detail could, of course, be included as notes to the published financial statement.

### Exhibit 11.3 Financial statements for publication presented according to Format 1

Block plc Profit and Loss Account for the year ending 31 December 20X6		
	£000	£000
1 Turnover		800
2 Cost of sales		(500)
3 Gross profit		300
4 Distribution costs	60	
5 Administrative expenses	40	
		(100)
		200
6 Other operating income		30
		230
7 Income from shares in group undertakings	20	
8 Income from participating interests	10	
9 Income from other fixed asset investments	5	
10 Other interest receivable and similar income	15	
		50
		280
11 Amounts written off investments	4	
12 Interest payable and similar charges	16	
		( 20)
Profit or loss on ordinary activities before taxation		260
13 Tax on profit or loss on ordinary activities		( 95)
14 Profit or loss on ordinary activities after taxation		165
Transfer to reserves	40	
Dividends paid and proposed	100	
		(140)
Retained profits for the period		25

**Note:** The retained profit from the previous year is not shown. It would normally appear in a note to the financial statements concerning movements on the reserves.

When internal financial statements are prepared in the format shown in Exhibit 11.2, they could be published just as they are, because all the items are shown in the correct order. The Companies Act does not force companies to publish detailed financial statements (for example, such as shown in Exhibit 11.2). Rather, it states the *minimum* information which must be disclosed. A company can show more than the minimum if it wants to but normally, as above, companies prefer to do so in notes to the financial statement, if at all.

### Activity 11.3

Why would most companies *not* want to publish detailed financial statements?

Now, let's look at Format 1 in more detail.

## 11.6 Definition of items in Format 1

### Format item 1

Turnover is defined as the amounts derived from the provision of goods and services falling within the company's ordinary activities, net after deduction of VAT and trade discounts.

### Format items 2, 4 and 5

The figures for cost of sales, distribution costs and administrative expenses must include any depreciation charges connected with these functions. For example, in the case of Block plc, depreciation charges are included in both distribution costs and administration expenses, but not in cost of sales.

### Format item 6

This is operating income which does not fall under item 1. Such items as rents receivable or royalties receivable might be found under this heading.

### Format item 7

In Chapter 19, you will be introduced to the concept of parent and subsidiary undertakings. A parent is able to exert a dominant influence over (i.e. control) the activities of the subsidiary usually but, not necessarily, as a result of its owning a majority of the voting rights in the subsidiary. Together, the parent company and all its subsidiaries are a 'group'. Any dividends received by a company from its investments in shares in any member of the group have to be shown separately.

### Activity 11.4

Why do you think dividends of this kind must be shown separately?

### Format item 8

The term 'participating interest' means one where the parent company has a long-term holding of shares or their equivalent in an undertaking for the purpose of securing a contribution to the investor's own activities by the exercise of control or influence arising from or related to that interest. Where the equity stake exceeds 20 per cent, there is a presumption of such influence unless the contrary is shown.

### Format item 12

This includes bank interest on loans and overdrafts, debenture interest, etc.

The profit and loss account produced will not appear precisely as presented in Exhibit 11.1. As can be seen in Exhibit 11.3, the published profit and loss account for Block plc contains no items in categories 15, 16, 17, 18, 19 or (although the amount it represents is shown under item 14) 20. In addition, after item 14, there are several more lines that must be included where they have values, those of transfer to reserves and proposed dividends. Although not included in Format 1, they are required according to the detailed rules accompanying the format. This also applies to line 20, 'Profit or loss for the financial year' shown in Exhibit 11.1, when that line is included.

It would also have been possible to amalgamate items, for instance 4 and 5 could have been shown together as 'Net operating expenses £100,000'. In this case, included in the notes appended to the financial statements would be an item showing the composition of the figure of £100,000.

In the notes attached to the profit and loss account, the Companies Acts require that the following be shown separately:

- 1 Interest on bank loans, overdrafts and other loans:
  - (a) repayable within 5 years from the end of the accounting period;
  - (b) finally repayable after 5 years from the end of the accounting period.
- 2 Amounts set aside for redemption of share capital and for redemption of loans.
- 3 Rents from land, if material.
- 4 Costs of hire of plant and machinery.
- 5 Auditors' remuneration, including expenses.

Where a company carries on business of two or more classes differing substantially from each other, a note is required of the amount of turnover for each class of business, and the division of the profit and loss before taxation between each class. Information also has to be given of the turnover between geographical markets.

Notes are also required concerning numbers of employees, wages and salaries, social security costs, and pension costs.

Three further disclosure requirements of the Companies Act are expanded by FRS 3:

- 1 The effect must be stated of any amount relating to any preceding financial year included in any item in the profit and loss account.
- 2 Particulars must be given of any extraordinary income or charges arising in the financial year.
- 3 The effect of any transaction of exceptional size or incidence that falls within the ordinary activities of the company must be stated.

## 11.7 Layout of the profit and loss account

If Block plc had items relevant to the other Format 1 categories, the profit and loss account would have been presented as shown in Exhibit 11.4. Note that the lines added have been included simply to show what the statement would look like. Where a category has no value, it would normally be omitted from the statement, as was the case in Exhibit 11.3. In addition, Exhibit 11.4 shows the extra lines that must be included but are not included in Format 1 in the Companies Act. It is also worthwhile noting that the four lines in Format 1 that relate to *extraordinary items* are virtually eliminated as a result of the definition of the term that was introduced in FRS 3: *Reporting financial performance*. As a result of its issuing FRS 3, the Accounting Standards Board does not expect any company to identify an item as 'extraordinary' in its financial

statements and so items 15 to 18 are unlikely to be seen in any future published profit and loss accounts.

**See Section 11.11 for more on FRS 3 and extraordinary items.**

### Exhibit 11.4

Block plc		
Profit and Loss Account for the year ending 31 December 20X6		
	£000	£000
1 Turnover		800
2 Cost of sales		(500)
3 Gross profit		300
4 Distribution costs	60	
5 Administrative expenses	<u>40</u>	
		(100)
6 Other operating income		200
		<u>30</u>
		230
7 Income from shares in group undertakings	20	
8 Income from participating interests	10	
9 Income from fixed asset investments	5	
10 Other interest receivable and similar income	<u>15</u>	
		<u>50</u>
		280
11 Amounts written off investments	4	
12 Interest payable and similar charges	<u>16</u>	
		( 20)
Profit or loss on ordinary activities before taxation		260
13 Tax on profit or loss on ordinary activities		( 95)
14 Profit or loss on ordinary activities after taxation		165
15 Extraordinary income	0	
16 Extraordinary charges	0	
17 Extraordinary profit or loss	0	
18 Tax on extraordinary profit or loss	<u>0</u>	
		<u>0</u>
		165
19 Other taxes not shown under the above items		<u>0</u>
20 Profit or loss for the financial year		165
Transfer to reserves	40	
Dividends paid and proposed	<u>100</u>	
		(140)
Retained profits for the year		<u>25</u>

## 11.8 Allocation of expenses

It will be obvious under which heading most expenses will be shown, whether they are:

- (a) cost of sales;
- (b) distribution costs; or
- (c) administrative expenses.

However, as the Companies Acts do not define these terms, some items are not so easy to allocate with certainty. Some companies may choose one heading for a particular item, while another company will choose another. These items can now be examined.

- 1 **Discounts received.** These are for prompt payment of amounts owing by us. Where they are for payments to suppliers of goods they could be regarded either as a reduction in the cost of goods or, alternatively, as a financial recompense, i.e. the reward for paying money on time. If regarded in the first way they would be deducted from cost of sales, whereas the alternative approach would be to deduct them from administrative expenses. However, these discounts are also deducted when paying bills in respect of distribution costs or administrative expenses, and it would also be necessary to deduct from these headings if the cost of sales deduction approach is used. As this raises complications in the original recording of discounts received, it would be more suitable in this book if all cash discounts received are deducted in arriving at the figure of administrative expenses.
- 2 **Discounts allowed.** To be consistent in dealing with discounts, this should be included in administrative expenses.
- 3 **Bad debts.** These could be regarded as an expense connected with sales: after all, they are sales which are not paid for. The other point of view is that for a debt to become bad, at least part of the blame must be because the proper administrative procedures in checking on customers' creditworthiness has not been thorough enough. In this book all bad debts will be taken as being part of administrative expenses.

## 11.9 FRS 3: Reporting financial performance

Accounting is not a static subject. Changes occur over the years as they are seen to be necessary, and also get general agreement as to their usefulness. Since the advent of SSAPs and FRSs the number of changes that practitioners and students have had to learn has increased at a very fast rate. A prime example of this is the introduction of FRS 3, which necessitates changes to the formats of profit and loss accounts when certain events have occurred.

This standard replaced SSAP 6: *Extraordinary items and prior year adjustments*, temporarily amended SSAP 3: *Earnings per share* (FRS 14: *Earnings per share* was issued five years after FRS 3), and also made changes as a result to various other accounting standards.

Suppose that you are considering the affairs of a business over the years. The business has not changed significantly, there have been no acquisitions, no discontinued operations, no fundamental reorganisation or restructuring of the business, nor have there been any extraordinary items affecting the financial statements. In these circumstances, when comparing the financial statements over the years, you are comparing like with like, subject to the problem of the effect of inflation or deflation.

On the other hand, suppose that some of the things mentioned have occurred. When trying to see what the future might hold for the company, simply basing your opinions on what has happened in the past can be very confusing.

To help you to distinguish the past and the future, and to give you some idea as to what changes have occurred, FRS 3 requires that the following are highlighted in the profit and loss account if the amounts involved are material:

- 1 *What the results of continuing operations are, including the results of acquisitions.* Obviously acquisitions affect future results, and are therefore included in continuing operations.
- 2 *What the results have been of discontinued operations.* This should help distinguish the past from the future.
- 3 *The profits or losses on the sale or termination of an operation, the costs of fundamental reorganisation or restructuring and the profits and losses on the disposal of fixed assets.* The

profits and losses concerning these matters are not going to happen again, and so this also helps us distinguish the past from the future.

You can see how FRS 3 requires these items to be shown on the face of the profit and loss account in Exhibit 11.5. Not only is the turnover split to show the figures relevant to continuing operations, acquisitions, and discontinued operations, the operating profit is split along the same lines. In addition, any profit or loss on the disposal of the discontinued operations is also shown. Exhibit 11.5 is restricted to the first six categories of Format 1 as this is the part of the statement affected by these FRS 3 requirements. Once again, we will use Block plc for the example.

### Exhibit 11.5

Block plc		
Profit and Loss Account for the year ending 31 December 20X6 (extract)		
	£000	£000
1 Turnover		
Continuing operations	520	
Acquisitions	110	
	630	
Discontinued operations	170	
		800
2 Cost of sales		(500)
3 Gross profit		300
4 Distribution costs	60	
5 Administrative expenses	40	
		(100)
Operating profit		
Continuing operations	160	
Acquisitions	60	
	220	
Discontinued operations (loss)	(20)	
		200
Profit on disposal of discontinued operations (a)		10
		210
6 Other operating income		20
Profit or loss on ordinary activities before interest		230

The item marked (a) can be described as an exceptional item. It is material in amount, falls within the ordinary activities of the firm, and needs to be shown so that the financial statements will give a 'true and fair view'.

It is exceptional in that it is not the ordinary daily occurrence, but remember that it falls within the ordinary activities of the company. FRS 3 requires that three categories of exceptional items be shown separately on the face of the profit and loss account after operating profit and before interest, and included under the appropriate heading of continued or discontinued operations:

- 1 Profits or losses on the sale or termination of an operation.
- 2 Costs of a fundamental reorganisation or restructuring having a material effect on the nature and focus of the reporting entity's operations.
- 3 Profits or losses on the disposal of fixed assets.

Other exceptional items should be credited or charged in arriving at the profit or loss on ordinary activities by inclusion under the heading to which they relate. The amount of each exceptional item should be disclosed in a note, or on the face of the profit and loss account, if necessary in order to give a true and fair view.

## 11.10 Other statements and notes required by FRS 3

### Statement of total recognised gains and losses

The *statement of total recognised gains and losses* is one of two new primary statements introduced by FRS 3. It shows the extent to which shareholders' funds have increased or decreased from all the various gains and losses recognised in the period, and enables users to consider all recognised gains and losses of a reporting entity in assessing its overall performance; an example of what would be included in the statement would be unrealised gains on fixed asset revaluations. Exhibit 11.6 presents an example of the statement using the data from Block plc.

#### Exhibit 11.6

##### Block plc Statement of Total Recognised Gains and Losses

	20X6 £000
Profit for the financial year*	165
Unrealised surplus on revaluation of properties	12
Unrealised (loss)/gain on trade investment	( 8)
	169
Currency translation differences on foreign currency investments	( 5)
Total recognised gains and losses relating to the year	164
Prior period adjustment	( 19)
Total gains and losses recognised since last annual report	<u>145</u>

\*See Exhibit 11.4.

**Note:** Only the profit figure can be found in the profit and loss account. The others have been inserted to demonstrate what the statement looks like. Also, as with all these statements, including the profit and loss account, comparative figures would also be shown.

### Note of historical cost profits and losses

Where assets have been revalued, which obviously affects depreciation, the revalued figures may have a material effect upon the results shown in the financial statements. If this is the case, FRS 3 requires that there should also be shown as a note what the profit and loss account would have been if the account had been shown using historical (i.e. not revalued) figures.

The note should also show how the reported profit on ordinary activities (using revalued assets) can be reconciled with that calculated using historical figures, and should also show the retained profit figure for the financial year reported on the historical cost basis. The note should be presented immediately following the profit and loss account or the statement of total recognised gains and losses. An example of the note is presented in Exhibit 11.7.



**Exhibit 11.7**

**Block plc**  
**Note of Historical Cost Profits and Losses**

	20X6 £000
Reported profit on ordinary activities before taxation <sup>(Note 1)</sup>	260
Realisation of property revaluation gains of previous years	12
Difference between a historical cost depreciation charge and the actual depreciation charge of the year calculated on the revalued amount	<u>1</u>
Historical cost profit on ordinary activities before taxation	273
Historical cost profit for the year retained after taxation, minority interests, extraordinary items and dividends (273 – 95 – 100)	<u><u>78</u></u>

**Notes:**

(1) See Exhibit 11.4.

(2) As with the statement of total recognised gains and losses, only the profit figure can be identified in the profit and loss account. Also, comparative figures should be shown.

**Reconciliation of movements in shareholders' funds**

The profit and loss account and the statement of total recognised gains and losses reflect the performance of a reporting entity in a period, but there are other changes that can occur in shareholders' funds that these two statements do not disclose, and which can be important in understanding the change in the financial position of the entity – for example, a new share issue or goodwill written off. For this reason, FRS 3 also gave the *reconciliation of movements in shareholders' funds* the status of a primary statement, its purpose being to highlight these other changes in the financial position. When shown as a primary statement (there is an option to show it as a note), the reconciliation should be shown separately from the statement of total recognised gains and losses. Exhibit 11.8 presents an example of the statement.

**Exhibit 11.8**

**Block plc**  
**Reconciliation of Movements in Shareholders' Funds**

	20X6 £000
Profit for the financial year <sup>(Note 1)</sup>	165
Dividends	(100)
	65
Other recognised gains and losses relating to the year (net)	( 1)
New share capital subscribed	20
Goodwill written off	(25)
Net addition to shareholders' funds	59
Opening shareholders' funds (originally £321,000 before deducting prior period adjustment of £19,000)	302
Closing shareholders' funds	<u><u>361</u></u>

**Notes:**

(1) See Exhibit 11.4.

(2) The figures can be found in the other statements except for the new share capital, the goodwill written off and the opening shareholders' funds amounts. As before, comparative figures should also be presented.

## 11.11 FRS 3 and extraordinary items

You have just seen that FRS 3 requires that some of the exceptional items are highlighted on the face of the profit and loss account, whilst others can be put under appropriate headings with notes giving more detail attached to the financial statements.

In Exhibit 11.3 all of these exceptional items will have been dealt with by the time that item 14, 'Profit for the year on ordinary activities after taxation', has been reached. Any extraordinary items are shown as items 15, 16, 17 and 18.

Before FRS 3, the distinction between what was an exceptional item and what was an extraordinary item was not as well defined as it could have been. This led to directors of companies sometimes manipulating the figures for their own ends while keeping within the necessary legal boundaries.

They did this because the profit per item 14 was widely used to assess how well a company was being managed. It was a vital part of calculating the earnings per share (EPS) which is a main indicator to many people of the company's performance. If a favourable item could be called an 'exceptional item' it would increase the size of the profit as shown by item 14. On the other hand, should an item be unfavourable, and therefore lower the figure of profit shown by item 14, then perhaps it could be (and it often was) included instead as an 'extraordinary item'. In this way, the profit per item 14 could be shown at a higher figure than was really justified. Such actions could and did affect the Stock Exchange value of companies' shares.

FRS 3 put an end to this by being more strict about what is, or is not, an extraordinary item, and thus to be shown after item 14 in the profit and loss account. Extraordinary items:

- (a) should be material items possessing a high degree of abnormality which arise from events or transactions that fall outside the ordinary activities of the business; and
- (b) are not expected to recur;
- (c) do not include exceptional items; and
- (d) do not include items relating to a prior period merely because they relate to a prior period.

Extraordinary items fall *outside* the 'ordinary' activities of a company, whereas exceptional items fall *within* them. 'Ordinary activities' are any activities undertaken by a reporting entity as part of its business and such related activities in which the reporting entity engages in furtherance of, incidental to or arising from these activities. Ordinary activities include the effects on the reporting entity of any event in the various environments in which it operates. It is little wonder that the ASB did not believe that anything could ever be categorised as an extraordinary item after the introduction of FRS 3.

## 11.12 FRS 3 and prior period adjustments

Prior period adjustments are material adjustments applicable to prior periods arising from changes in accounting policies or from the correction of fundamental errors. They do not include normal recurring adjustments or corrections of accounting estimates (such as, for example, the estimated scrap value of a fixed asset) made in prior periods.

Prior period adjustments are accounted for by restating the comparative figures (i.e. the equivalent figures for the previous accounting period) for the preceding period in the primary statements and notes and adjusting the opening balance of reserves for the cumulative effect. The cumulative effect of the adjustments is also noted at the foot of the statement of total recognised gains and losses of the current period (*see* Exhibit 11.6). Where practicable, the effect of prior period adjustments on the results for the preceding period is disclosed.

## 11.13 FRS 3 and comparative figures

Comparative figures should be shown for all items in the primary statements and the notes to the statements required by FRS 3. The comparative figures in the ‘continuing operations’ category of the profit and loss account should include only the results of those operations included in the current period’s ‘continuing operations’ category.

## 11.14 IAS 1: *Presentation of financial statements*

While there are differences between FRS 3 and IAS 1 – there is no international equivalent of the *statement of realised gains and losses*, for example – the presentation of information under both standards is virtually identical.

### Learning outcomes

You should now have learnt:

- 1 How the Companies Act defines company size.
- 2 There are set formats for the preparation of published financial statements.
- 3 Financial statements prepared for internal use need not comply with these set formats but are often based upon them.
- 4 FRS 3: *Reporting financial performance* amended the Companies Act format for the profit and loss account by requiring further details to be disclosed concerning:
  - (a) continuing and discontinued operations;
  - (b) restructuring; and
  - (c) disposal of fixed assets.
- 5 In addition, by defining extraordinary items out of existence, FRS 3 effectively made obsolete a number of the categories contained in the Companies Act profit and loss accounts format relating to extraordinary items.
- 6 FRS 3 introduced two additional primary financial statements:
  - (a) the statement of total recognised gains and losses;
  - (b) the reconciliation of movements in shareholders’ funds (may be shown as a note).
- 7 It also introduced a new note – the note of historical cost profits and losses.

### Answers to activities

- 11.1 Combined with the regulations enshrined in accounting standards that govern how data will be processed and selected for inclusion as information in the financial statements, the standardisation brought about by the Companies Act 1981 makes meaningful comparison between the financial statements of different companies feasible.
- 11.2 For the same reason that many small companies use the percentage rates provided by the tax rules relating to capital allowances when setting their depreciation rates – it saves them redoing the calculation – many small companies use the Companies Act formats as the basis for their internal financial statements, adding more detail when they feel it is appropriate to do so.
- 11.3 Because doing so may give their competitors information which would lead to the company losing some of its competitive advantage.

- 11.4** The parent company can decide how much it wishes to receive as dividends from its subsidiaries. Unless this amount is shown separately, the total amount received from all investments by way of dividends may mislead anyone who does not know where they came from.

**Advice:** It is important for you to know that the published profit and loss account of a company must show certain items in a given order.

The contents of FRS 3 are likely to attract quite a lot of exam questions. In particular the definition of extraordinary items per FRS 3. Some may come in the form of the directors of a company wanting to classify something as extraordinary, and therefore shown after item 14, 'Profit or loss on ordinary activities after taxation'.

## Review questions

- 11.1** From the following selected balances of Filo plc as at 31 March 20X5 draw up (i) a detailed trading and profit and loss account for internal use, and (ii) a profit and loss account for publication.

	£
Profit and loss account as at 31 March 20X4	102,000
Stock 1 April 20X4	84,000
Purchases	1,462,000
Sales	2,456,000
Returns inwards	108,000
Returns outwards	37,000
Carriage inwards	14,700
Wages and salaries (see Note (b))	136,000
Rent and business rates (see Note (c))	14,000
General distribution expenses	28,000
General administrative expenses	24,000
Discounts allowed	36,000
Bad debts	5,000
Debenture interest	12,000
Motor expenses (see Note (d))	16,000
Interest received on bank deposit	6,000
Income from shares in undertakings in which the company has a participating interest	3,000
Motor vehicles at cost: Administrative	54,000
Distribution	92,000
Equipment at cost: Administrative	15,000
Distribution	12,000
Royalties receivable	4,000
Dividends paid	120,000

Notes:

- Stock at 31 March 20X5 £102,000.
- Wages and salaries are to be apportioned: Distribution costs  $\frac{1}{4}$ , Administrative expenses  $\frac{3}{4}$ .
- Rent and business rates are to be apportioned: Distribution costs 55 per cent, Administrative expenses 45 per cent.
- Apportion motor expenses in the proportions 2:3 between distribution costs and administrative expenses.
- Depreciate motor vehicles 20 per cent and equipment 10 per cent on cost.
- Accrue auditors' remuneration of £11,000.
- Accrue corporation tax for the year on ordinary activity profits £364,000.
- A sum of £20,000 is to be transferred to general reserve.

	£
Stock 1 January 20X8	140,000
Sales	1,860,000
Purchases	1,140,000
Carriage inwards	8,000
Returns inwards	9,000
Returns outwards	5,000
Discounts allowed	11,000
Discounts received	14,000
Wages (putting goods into saleable condition)	88,000
Salaries and wages: Sales and distribution staff	62,000
Salaries and wages: Administrative staff	74,000
Motor expenses (see Note (c))	24,000
Rent and business rates (see Note (d))	28,000
Investments in undertakings in which the company has a participating interest (market value £74,000)	100,000
Income from shares in undertakings in which the company has a participating interest	5,000
General distribution expenses	12,000
General administrative expenses	6,000
Bad debts	2,000
Interest from government securities	3,000
Haulage costs: Distribution	4,000
Debenture interest payable	2,000
Profit and loss account: 31 December 20X7	94,000
Motor vehicles at cost: Distribution and sales	60,000
Administrative	26,000
Plant and machinery at cost: Distribution and sales	50,000
Administrative	30,000
Production	60,000
Directors' remuneration	36,000
Dividends paid	60,000

- (a) The production department puts goods bought into a saleable condition.
- (b) Stock at 31 December 20X8 £160,000.
- (c) Apportion motor expenses: distribution  $\frac{3}{4}$ , administrative  $\frac{1}{4}$ .
- (d) Apportion rent and business rates: distribution 40 per cent, administrative 60 per cent.
- (e) Write £26,000 off the value of investments in undertakings in which the company has a participating interest.
- (f) Depreciate motor vehicles 25 per cent on cost, plant and machinery 15 per cent on cost.
- (g) Accrue auditors' remuneration £14,000.
- (h) Accrue corporation tax on ordinary activity profits £104,000.
- (i) A sum of £25,000 is to be transferred to debenture redemption reserve.

**11.3** The following information has been extracted from the books of account of Rufford plc for the year to 31 March 20X6:

	<i>Dr</i> £000	<i>Cr</i> £000
Administration expenses	97	
Deferred taxation		24
Depreciation on office machinery (for the year to 31 March 20X6)	8	
Depreciation on delivery vans (for the year to 31 March 20X6)	19	
Distribution costs	33	
Dividends received (from a UK listed company on 31 July 20X5)		14
Factory closure expenses (closed on 1 April 20X5)	12	
Interest payable on bank overdraft (repayable within five years)	6	
Interim dividend (paid on 30 September 20X5)	21	
Interest receivable		25
Purchases	401	
Retained profit at 31 March 20X5		160
Sales (net of VAT)		642
Stock at 1 April 20X5	60	

*Additional information:*

- 1 Administrative expenses include the following items:
 

	<i>£000</i>
Auditors' remuneration	20
Directors' emoluments	45
Travelling expenses	1
Research expenditure	11
Hire of plant and machinery	12
- 2 It is assumed that the following tax rates are applicable for the year to 31 March 20X6:
 

Corporation tax	50%
Income tax	30%
- 3 There was an overprovision for corporation tax of £3,000 relating to the year to 31 March 20X5.
- 4 Corporation tax payable for the year to 31 March 20X6 (based on the profits for that year) is estimated to be £38,000. The company, in addition, intends to transfer a further £9,000 to its deferred taxation account.
- 5 A final dividend of £42,000 for the year to 31 March 20X6 is expected to be paid on 2 June 20X6.
- 6 Stock at 31 March 20X6 was valued at £71,000.
- 7 As a result of a change in accounting policy, a prior period charge of £15,000 (net of tax) is to be made.
- 8 The company's share capital consists of 420,000 ordinary shares of £1 each. There are no preference shares, and no change had been made to the company's issued share capital for some years.

**Required:**

- (a) In so far as the information permits, prepare the company's published profit and loss account for the year to 31 March 20X6 in the vertical format in accordance with the Companies Act and with related accounting standards.  
(NB: A statement of the company's accounting policies is not required.)
- (b) Prepare balance sheet extracts in order to illustrate the balances still remaining in the following accounts at 31 March 20X6:
  - (i) corporation tax;
  - (ii) proposed dividend; and
  - (iii) deferred taxation.
 (NB: A detailed balance sheet is not required.)

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	£
Purchases	1,310,000
Sales	1,790,000
Returns inwards	29,000
Returns outwards	57,000
Carriage inwards	10,000
Wages – productive	109,000
Discounts allowed	11,000
Discounts received	15,000
Stock 31 July 20X1	317,000
Wages and salaries: Sales and distribution	41,000
Wages and salaries: Administrative	62,000
Motor expenses: Sales and distribution	26,000
Motor expenses: Administrative	8,000
General distribution expenses	7,000
General administrative expenses	6,000
Rent and business rates (see Note (c))	17,000
Directors' remuneration	35,000
Profit and loss account: 31 July 20X1	141,000
Advertising	19,000
Bad debts	3,000
Hire of plant and machinery (see Note (b))	14,000
Motor vehicles at cost: Sales and distribution	45,000
Administrative	18,000
Plant and machinery: Distribution	13,000
Debenture interest payable	7,000
Income from shares in group undertakings	8,000
Income from shares in undertakings in which the company has a participating interest	5,000
Preference dividend paid	20,000
Profit on disposal of investments	14,000
Tax on profit on disposal of investments	3,000
Ordinary dividend paid	110,000

- (a) Stock at 31 July 20X2 £303,000.
- (b) The hire of plant and machinery is to be apportioned: productive £12,000, administrative £2,000.
- (c) Rent and business rates to be apportioned: distribution  $\frac{3}{4}$ , administrative  $\frac{1}{4}$ .
- (d) Motors are to be depreciated at  $33\frac{1}{3}$  per cent on cost; plant and machinery to be depreciated at 10 per cent on cost.
- (e) Auditors' remuneration of £15,000 to be accrued.
- (f) Corporation tax on profit from ordinary activities for the year is estimated at £29,000, excluding tax on disposal of investments.
- (g) Transfer £50,000 to general reserve.

**11.5A** From the following balances in the books of Breaker plc you are to draw up (i) a detailed trading and profit and loss account for the year ended 31 March 20X4 for internal use, and (ii) a profit and loss account for publication:

	£
Plant and machinery, at cost (see Note (c))	105,000
Bank interest receivable	3,000
Discounts allowed	7,000
Discounts received	6,000
Hire of motor vehicles: Sales and distribution	14,000
Hire of motor vehicles: Administrative	5,000
Licence fees receivable	13,000
General distribution expenses	26,000
General administrative expenses	19,000
Wages and salaries: Sales and distribution	177,000
Administrative	98,000
Directors' remuneration	41,000
Motor expenses (see Note (e))	11,000
Ordinary dividend paid	80,000
Stock 31 March 20X3	208,000
Sales	1,450,000
Purchases	700,000
Returns outwards	22,000
Returns inwards	29,000
Profit and loss account as at 31 March 20X3	88,000

*Notes:*

- (a) Stock at 31 March 20X4 £230,000.
- (b) Accrue auditor's remuneration £8,000.
- (c) Of the plant and machinery, £70,000 is distributive in nature, while £35,000 is for administration.
- (d) Depreciate plant and machinery 25 per cent on cost.
- (e) Of the motor expenses,  $\frac{4}{5}$  is for sales and distribution and  $\frac{1}{5}$  for administration.
- (f) Corporation tax on ordinary profits is estimated at £143,000.
- (g) A sum of £25,000 is to be transferred to general reserve.







**11.6A** Bunker plc is a trading company; it does not carry out *any* manufacturing operations. The following information has been extracted from the books of account for the year to 31 March 20X0:

	£000
Auditors' remuneration	30
Corporation tax: based on the accounting profit for the year to 31 March 20X0	7,200
overprovision for the year to 31 March 20X9	200
United Kingdom corporation tax relief on overseas operations: closure costs	30
Delivery expenses	1,200
Dividends: final (proposed – to be paid 1 August 20X0)	200
interim (paid on 1 October 20X9)	100
Fixed assets at cost:	
Delivery vans	200
Office cars	40
Stores plant and equipment	5,000
Investment income (amount received from listed companies)	1,600
Office expenses	800
Overseas operations: closure costs of entire operations on 1 April 20X9	350
Purchases (net of value added tax)	24,000
Sales (net of value added tax)	35,000
Stocks at cost:	
at 1 April 20X9	5,000
at 31 March 20X0	6,000
Storeroom costs	1,000
Wages and salaries:	
Delivery staff	700
Directors' emoluments	300
Office staff	100
Storeroom staff	400

**Additional information:**

**1 Depreciation policy:**

Depreciation is provided at the following annual rates on a straight line basis: delivery vans 20 per cent; office cars 7.5 per cent; stores plant and equipment 10 per cent.

**2 The following taxation rates may be assumed:**

corporation tax 35 per cent; income tax 25 per cent; value added tax 15 per cent.

**3 The investment income arises from investments held in fixed asset investments.**

**4 It has been decided to transfer an amount of £150,000 to the deferred taxation account.**

**5 There were 1,000,000 ordinary shares of £1 each in issue during the year to 31 March 20X0. There were no preference shares in issue.**

**Required:**

In so far as the information permits, prepare Bunker plc's published profit and loss account for the year to 31 March 20X0 in accordance with the minimum requirements of the Companies Act 1985 and related accounting standards.

*Note:* A statement of accounting policies is NOT required, but where appropriate, other formal notes SHOULD be attached to your profit and loss account. Detailed workings should also be submitted with your answer.

(Association of Accounting Technicians)

**11.7A** Fresno Group plc have prepared their financial statements for the year ended 31 January 20X4. However, the financial accountant of Fresno Group plc had difficulty in preparing the statements required by FRS 3: *Reporting financial performance*, and approached you for help in preparing those statements. The financial accountant furnished you with the following information:

(i) **Fresno Group plc**  
**Profit and Loss Account extract for year ended 31 January 20X4**

	<i>£ million</i>
Operating profit – continuing operations	290
Profit on sale of property in continuing operations	<u>10</u>
Profit on ordinary activities before taxation	300
Tax on ordinary activities	( 90)
Profit after taxation	210
Dividends	( 15)
Retained profit for year	<u>195</u>

The financial accountant did not provide for the loss on any discontinued operations in the profit and loss account. (However, you may assume that the taxation provision incorporated the effects of any provision for discontinued operations.)

(ii) The shareholders' funds at the beginning of the financial year were as follows:

	<i>£ million</i>
Share capital – £1 ordinary shares	350
Merger reserve	55
Revaluation reserve	215
Profit and loss reserve	<u>775</u>
	<u>1,395</u>

- (iii) Fresno Group plc regularly revalues its fixed assets and at 31 January 20X4, a revaluation surplus of £375 million had been credited to revaluation reserve. During the financial year, a property had been sold on which a revaluation surplus of £54 million had been credited to reserves. Further, if the company had charged depreciation on a historical cost basis rather than the revalued amounts, the depreciation charge in the profit and loss account for fixed assets would have been £7 million. The current year's charge for depreciation was £16 million.
- (iv) The group has a policy of writing off goodwill on the acquisition of subsidiaries directly against a merger reserve. The goodwill for the period amounted to £250 million. In order to facilitate the purchase of subsidiaries, the company had issued £1 ordinary shares of nominal value £150 million and share premium of £450 million. The premium had been taken to the merger reserve. All subsidiaries are currently 100 per cent owned by the group.
- (v) During the financial year to 31 January 20X4, the company had made a decision to close a 100 per cent owned subsidiary, Reno plc. However, the closure did not take place until May 20X4. Fresno Group plc estimated that as at 31 January 20X4 the operating loss for the period 1 February 20X4 to 31 May 20X4 would be £30 million and that in addition redundancy costs, stock and plant write-downs would amount to £15 million. In the event, the operating loss for the period 1 February 20X4 to 31 May 20X4 was £65 million, but the redundancy costs, stock and plant write-downs only amounted to £12 million.
- (vi) The following information relates to Reno plc for the period 1 February 20X4 to 31 May 20X4.

**Reno plc**

	<i>£ million</i>
Turnover	175
Cost of sales	(195)
Gross loss	(20)
Administrative expenses	(15)
Selling expenses	(30)
Operating loss before taxation	<u>(65)</u>





**Required:**

- (a) Prepare the following statements in accordance with current statutory requirements and FRS 3: *Reporting financial performance* for Fresno Group plc for the year ending 31 January 20X4:
- (i) statement of total recognised gains and losses;
  - (ii) reconciliation of movements in shareholders' funds;
  - (iii) analysis of movements on reserves;
  - (iv) note of historical cost profits and losses.
- (b) Explain to the financial accountant:
- (i) how the decision to close the subsidiary, Reno plc, affects the financial statements of Fresno Group plc for the year ended 31 January 20X4;
  - (ii) how the subsidiary, Reno plc, should be dealt with in the financial statements of Fresno Group plc for the year ended 31 January 20X5.

(Association of Chartered Certified Accountants)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# The financial statements of limited companies: balance sheets

## Learning objectives

After you have studied this chapter, you should be able to:

- describe the most commonly used format available under the Companies Acts that may be used when preparing balance sheets for external reporting purposes
- present information under the most commonly used of the Companies Acts formats
- describe the differences between the statutory format and formats generally adopted for internal use
- describe the exemption of some 'small' companies from having their financial statements audited
- describe the exemptions available to small and medium-sized companies in respect of filing modified financial statements
- describe the option available to public limited companies to send members a summary financial statement

## Introduction

In this chapter, you'll learn about the format normally adopted for balance sheets prepared for publication. You will also be reminded of the fundamental accounting concepts that you covered in *Business Accounting 1* and introduced to the rules relating to the preparation of modified financial statements for small and medium-sized companies.

### 12.1 Balance sheet formats

The Companies Acts set out two formats for the balance sheet. The method we will follow is that contained in Format 1, because this is the one used by most UK companies.

Format 1 is shown in Exhibit 12.1. Monetary amounts have been included to make it easier to follow and understand.

**Exhibit 12.1****Balance Sheet – Format 1**

	£000	£000	£000
A CALLED-UP SHARE CAPITAL NOT PAID*			10
B FIXED ASSETS			
I Intangible assets			
1 Development costs	20		
2 Concessions, patents, licences, trade marks and similar rights and assets	30		
3 Goodwill	80		
4 Payments on account	<u>5</u>		
		135	
II Tangible assets			
1 Land and buildings	300		
2 Plant and machinery	500		
3 Fixtures, fittings, tools and equipment	60		
4 Payments on account and assets in course of construction	<u>20</u>		
		880	
III Investments			
1 Shares in group undertakings	15		
2 Loans to group undertakings	10		
3 Participating interests	20		
4 Loans to undertakings in which the company has a participating interest	5		
5 Other investments other than loans	30		
6 Other loans	16		
7 Own shares	<u>4</u>		
		<u>100</u>	
			1,115
C CURRENT ASSETS			
I Stock			
1 Raw materials and consumables	60		
2 Work in progress	15		
3 Finished goods and goods for resale	120		
4 Payments on account	<u>5</u>		
		200	
II Debtors			
1 Trade debtors	200		
2 Amounts owed by group undertakings	20		
3 Amounts owed by undertakings in which the company has a participating interest	10		
4 Other debtors	4		
5 Called-up share capital not paid*	–		
6 Prepayments and accrued income†	<u>–</u>		
		234	
III Investments			
1 Shares in group undertakings	40		
2 Own shares	5		
3 Other investments	<u>30</u>		
		75	
IV Cash at bank and in hand		<u>26</u>	
		535	
D PREPAYMENTS AND ACCRUED INCOME†		<u>15</u>	
		550	

	£000	£000	£000
E CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR			
1 Debenture loans	5		
2 Bank loans and overdrafts	10		
3 Payments received on account	20		
4 Trade creditors	50		
5 Bills of exchange payable	2		
6 Amounts owed to group undertakings	15		
7 Amounts owed to undertakings in which the company has a participating interest	6		
8 Other creditors including taxation and social security	54		
9 Accruals and deferred income†	—		
		(162)	
F NET CURRENT ASSETS (LIABILITIES)			388
G TOTAL ASSETS LESS CURRENT LIABILITIES			1,513
H CREDITORS: AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR			
1 Debenture loans	20		
2 Bank loans and overdrafts	15		
3 Payments received on account	5		
4 Trade creditors	25		
5 Bills of exchange payable	4		
6 Amounts owed to group undertakings	10		
7 Amounts owed to undertakings in which the company has a participating interest	5		
8 Other creditors including taxation and social security	32		
9 Accruals and deferred income†	—		
		116	
I PROVISIONS FOR LIABILITIES AND CHARGES			
1 Pensions and similar obligations	20		
2 Taxation, including deferred taxation	40		
3 Other provisions	4		
		64	
J ACCRUALS AND DEFERRED INCOME†		20	
			( 200)
			<u>1,313</u>
K CAPITAL AND RESERVES			
I Called-up share capital			1,000
II Share premium account			100
III Revaluation reserve			20
IV Other reserves:			
1 Capital redemption reserve		40	
2 Reserve for own shares		10	
3 Reserves provided for by the articles of association		20	
4 Other reserves		13	
			83
V Profit and loss account			110
			<u>1,313</u>

\*†† These items may be shown in any of the positions indicated.

It should be noted that various items can be shown in alternative places, i.e.:

- (a) *called-up share capital not paid*, either in position A or position CII 5;
- (b) *prepayments and accrued income*, either CII 6 or as D;
- (c) *accruals and deferred income*, either E9 or H9, or in total as J.

Items preceded by letters or roman numerals *must* be disclosed on the face of the balance sheet, e.g. B Fixed assets, KII Share premium account, whereas those shown with arabic numerals (1, 2, 3, 4, etc.) may be combined where they are not material or when the combination facilitates assessment of the company's affairs. Where they are combined, the details of each item should be shown in the notes accompanying the financial statements. The actual letters, roman numerals or arabic numbers do *not* have to be shown on the face of the published balance sheets and, in virtually all cases, they are not.

## 12.2 Further details for Format 1

The following also apply to balance sheets prepared according to the Format 1 layout.

BI Intangible assets are assets not having a 'physical' existence compared with tangible assets which do have a physical existence. For instance, you can see and touch the tangible assets, such as land and buildings, plant and machinery, etc., but you cannot touch goodwill.

For each of the fixed assets, whether it is an intangible asset, tangible asset, or investment, full details must be given in the notes accompanying the financial statements of (a) cost, at beginning and end of financial year, (b) any effect on that item of acquisitions, disposals, revaluations, etc. during the year, and (c) full details of depreciation, i.e. accumulated depreciation at start of year, depreciation for year, effect of disposals on depreciation in the year and any other adjustments.

All fixed assets, including property and goodwill, must be depreciated over the period of the useful economic life of each asset. Prior to this, many companies had not depreciated property because of rising money values of the asset. Costs of research must not be treated as an asset, and development costs may be capitalised only in special cases. Any hire purchase owing must not be deducted from the assets concerned. Only goodwill which has been purchased can be shown as an asset; internally generated goodwill must not be capitalised.

**See Chapter 17 for further information on goodwill in consolidated financial statements.**

Where an asset is revalued, normally this will be fixed assets being shown at market value instead of cost. Any difference on revaluation must be debited or credited to a revaluation reserve – see KIII in Format 1.

Investments shown as CIII will be in respect of those not held for the long term.

Two items which could previously be shown as assets – (a) preliminary expenses (these are the legal expenses etc. in forming the company), and (b) expenses of and commission on any issue of shares or debentures – must not now be shown as assets. They can be written off against any share premium account balance; alternatively they should be written off to the profit and loss account.

Full details of each class of share capital, and of authorised capital, will be shown in notes accompanying the balance sheet.

## 12.3 Choice of formats

The Acts leave the choice of a particular format for the balance sheet and the profit and loss account to the directors. Once adopted, the choice must be adhered to in subsequent years except in the case that there are special reasons for the change. If a change is made, then full reasons for the change must be stated in the notes attached to the financial statements.

## 12.4 Fundamental accounting principles

The Companies Acts set out the accounting principles (or 'valuation rules' as they are called in the Fourth Directive of the EC) to be followed when preparing company financial statements.

The following principles are stated in the Acts. The reader is referred to Chapter 10 of *Business Accounting 1* for a fuller discussion of some of them.

- 1 A company is presumed to be a going concern.
- 2 Accounting policies must be applied consistently from year to year.
- 3 The prudence concept must be followed.
- 4 The accruals concept must be observed.
- 5 Each component item of assets and liabilities must be valued separately. As an instance of this, if a company has five different types of stock, each type must be valued separately at the lower of cost and net realisable value, rather than be valued on an aggregate basis.
- 6 Amounts in respect of items representing assets or income may *not* be set off against items representing liabilities or expenditure. Thus an amount owing on a hire purchase contract cannot be deducted from the value of the asset in the balance sheet.

## 12.5 True and fair view

If complying with the requirements of the Companies Acts would cause the financial statements not to be 'true and fair' then the directors must set aside such requirements. This should not be done lightly, and it would not be common to find such instances.

## 12.6 Small and medium-sized company reporting requirements

Small and medium-sized companies (for a definition, *see* Section 11.2) do not have to file a full set of financial statements with the Registrar of Companies. If they wish, they can send a full set of financial statements, but what they *have* to file is a minimum of 'modified financial statements'. They still have to send a full set to their own shareholders who request them – the modified financial statements refer only to those filed with the Registrar.

In addition, there is no longer an audit requirement for small companies with a turnover of not more than £1 million and a balance sheet total of not more than £1.4 million, unless 10 per cent or more of shareholders sign a formal notice requesting an audit and lodge this at the registered office.

### Activity 12.1

Why do you think these small companies are exempted from having their financial statements audited?

## 12.7 Modified financial statements of small companies

- 1 Neither a profit and loss account nor a directors' report has to be filed with the Registrar.
- 2 A modified balance sheet showing only those items to which a letter or roman numeral are attached (*see* Format 1, Exhibit 12.1) has to be filed. As a result, for example, the total for CI Stock has to be shown but not the figures for each of the individual items comprising this total.

## 12.8 Modified financial statements of medium-sized companies

- 1 The profit and loss account per Format 1 does not have to show item 1 (Turnover), item 2 (Cost of sales) or item 6 (Other operating income). It will therefore begin with the figure of gross profit or loss.



- 2 The analyses of turnover and profit normally required as notes to the financial statements need not be given.
- 3 The balance sheet, however, must be given in full.

**Note:** Review questions on published company financial statements including notes required by law are at the end of Chapter 13.

## 12.9 Summary financial statements

A public limited company (plc) may send a summary financial statement to members in place of the full statements, but any member who requests the full statements must be sent them. The summary statement must:

- (a) state that it is only a summary of information in the company's financial statements and the directors' report;
- (b) contain a statement by the company's auditors of their opinion as to whether the summary financial statement is consistent with those financial statements and that report and complies with the requirements of the section in the Companies Act (CA 85 Section 251) that permits the distribution of this summary financial statement and the regulations made under it;
- (c) state whether the auditors' report on the financial statements was unqualified or qualified, and if it was qualified set out the report in full together with any further material needed to understand the qualification;
- (d) state whether the auditors' report on the annual accounts contained a statement under either:
  - (i) CA 85 Section 237(2) – accounting records or returns inadequate or financial statements not agreeing with records or returns; or
  - (ii) CA 85 Section 237(3) – failure to obtain necessary information and explanations and, if so, set out the statement in full.

### Activity 12.2

Why do you think companies are allowed to send their shareholders summary financial statements rather than the full statements?

## Learning outcomes

You should now have learnt:

- 1 There are set formats for the preparation of published financial statements.
- 2 Financial statements for internal use need not comply with these set formats.
- 3 Accounting standards have statutory recognition and must, therefore, be complied with when preparing financial statements intended to present a true and fair view.
- 4 Some small companies are exempted from having their financial statements audited.
- 5 Small and medium-sized companies may file modified financial statements with the Registrar if they wish.
- 6 Public limited companies may send a summary financial statement to members in place of the full statements, but any member who requests the full statements must be sent them.

## Answers to activities

- 12.1** Having financial statements audited is estimated as costing an average of £1,200. While this appears a small amount of money, it can be relatively expensive for small companies, particularly when they are newly formed and are making little or no profit. However, although this is a good reason for such companies not incurring the expense of having an audit, as the sole reason for not having an audit it goes against the principles upon which the need for an audit was based. A far more realistic explanation is that errors and misleading items in the financial statements of small companies have far less of an impact than in the case of larger organisations and, on a purely cost/benefit basis, it is unlikely that the costs of having an audit will be sufficiently offset by any amendments or clarifications that an audit may bring.
- 12.2** Many shareholders are not accountants and have no understanding of many of the items in full financial statements. Rather than sending them information they will not understand, shareholders may be sent simplified information containing those parts of the financial statements that they are both more likely to understand and more likely to be interested in having. This saves the companies (and their shareholders) money which, in itself, is a good thing. It also increases the possibility that shareholders will look at the financial statements in the first place.

## Review questions

**12.1** The following balances remained in the books of Polk Ltd on 31 March 20X4, *after* the profit and loss account and appropriation account had been drawn up. You are to draft the balance sheet as at 31 March 20X4 in accordance with the Companies Acts.

	Dr £	Cr £
Ordinary share capital: £1 shares		250,000
Preference share capital: 50p shares		100,000
Calls account (ordinary shares)	1,000	
Development costs	32,000	
Goodwill	104,000	
Land and buildings – at cost	250,000	
Plant and machinery – at cost	75,000	
Provision for depreciation: Buildings		20,000
Provision for depreciation: Plant and machinery		30,000
Shares in undertakings in which the company has a participating interest	70,000	
Stock: Raw materials	6,000	
Stock: Finished goods	36,000	
Debtors: Trade	24,000	
Amounts owed by undertakings in which the company has a participating interest	10,000	
Prepayments	2,000	
Debentures (see Note 1)		50,000
Bank overdraft (repayable on demand)		16,000
Creditors: Trade (payable within 1 year)		17,000
Bills payable (see Note 2)		4,000
Share premium		50,000
Capital redemption reserve		10,000
General reserve		20,000
Profit and loss account		43,000
	<u>610,000</u>	<u>610,000</u>

**Notes:**

- 1 Of the debentures, £20,000 is repayable in 5 months' time, while the other £30,000 is repayable in 4 years' time.
- 2 Of the bills payable, £3,000 is in respect of a bill to be paid in 8 months' time and £1,000 for a bill payable in 14 months' time.
- 3 The depreciation charged for the year was: Building £5,000, Plant and machinery £7,500.

**12.2** After the profit and loss appropriation account has been prepared for the year ended 30 April 20X7, the following balances remain in the books of Tickers plc. Prepare up a balance sheet in accordance with the Companies Acts.

	£	£
Ordinary share capital		100,000
Share premium		60,000
Revaluation reserve		23,000
General reserve		30,000
Foreign exchange reserve		7,000
Profit and loss		35,000
Patents, trade marks and licences	6,000	
Goodwill	42,000	
Land and buildings	280,000	
Provision for depreciation: Land and buildings		80,000
Plant and machinery	90,000	
Provision for depreciation: Plant and machinery		47,000
Stock of raw materials: 30 April 20X7	24,000	
Work in progress: 30 April 20X7	9,000	
Finished goods: 30 April 20X7	21,000	
Debtors: Trade	84,000	
Debtors: Other	3,000	
Prepayments and accrued income	2,000	
Debentures (redeemable in 6 months' time)		50,000
Debentures (redeemable in 4½ years' time)		40,000
Bank overdraft (repayable in 3 months)		3,000
Trade creditors (payable in next 12 months)		26,000
Trade creditors (payable after 12 months)		2,000
Bills of exchange (payable within 12 months)		5,000
Corporation tax (payable in 9 months' time)		38,000
National insurance (payable in next month)		1,000
Pensions contribution owing		8,000
Deferred taxation		6,000
	<u>561,000</u>	<u>561,000</u>

**12.3** The following trial balance has been extracted from the books of Baganza plc as at 30 September 20X7:

	£000	£000
Administrative expenses	400	
Called up share capital (1,200,000 ordinary shares of £1 each)		1,200
Cash at bank and in hand	60	
Corporation tax (overpayment for the year to 30 September 20X6)		20
Deferred taxation (at 1 October 20X6)		460
Distribution costs	600	
Dividends received (on 31 March 20X7)		249
Extraordinary item (net of tax)		1,500
Freehold property:		
at cost	2,700	
accumulated depreciation (at 1 October 20X6)		260
Interim dividend (paid on June 20X7)	36	
Investments in United Kingdom companies	2,000	
Plant and machinery:		
at cost	5,200	
accumulated depreciation (at 1 October 20X6)		3,600
Profit and loss account (at 1 October 20X6)		2,022
Purchases	16,000	
Research expenditure	75	
Stock (at 1 October 20X6)	2,300	
Tax on extraordinary item		360
Trade creditors		2,900
Trade debtors	2,700	
Turnover		19,500
	<u>£32,071</u>	<u>£32,071</u>

*Additional information:*

- The stock at 30 September 20X7 was valued at £3,600,000.
- Depreciation for the year to 30 September 20X7 is to be charged on the historic cost of the fixed assets as follows:  
     Freehold property: 5 per cent  
     Plant and machinery: 15 per cent
- The basic rate of income tax is assumed to be 27 per cent.
- The directors propose a final dividend of 60p per share.
- The company was incorporated in 20X0.
- Corporation tax based on the profits for the year at a rate of 35 per cent is estimated to be £850,000.
- A transfer of £40,000 is to be made to the deferred taxation account.

**Required:**

In so far as the information permits, prepare Baganza plc's profit and loss account for the year to 30 September 20X7, and a balance sheet as at that date in accordance with the Companies Act 1985 and appropriate accounting standards.

However, formal notes to the accounts are not required, although detailed workings should be submitted with your answer, which should include your calculation of earnings per share.

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### 12.4A The trial balance of Jeremina plc as at 31 March 20X2 is as follows:

	<i>Dr</i> £	<i>Cr</i> £
Preference share capital: 50p shares		200,000
Ordinary share capital: £1 shares		300,000
General reserve		25,000
Exchange reserve		15,000
Profit and loss as on 31 March 20X1		21,000
Stock 31 March 20X1	184,000	
Sales		1,320,000
Returns inwards	34,000	
Purchases	620,000	
Carriage inwards	6,000	
Wages (putting goods into a saleable condition)	104,000	
Wages: Warehouse staff	40,000	
Wages and salaries: Sales staff	67,000	
Wages and salaries: Administrative staff	59,000	
Motor expenses (see note (ii))	29,000	
General distribution expenses	17,000	
General administrative expenses	12,000	
Debenture interest	2,000	
Royalties receivable		5,000
Directors' remuneration	84,000	
Bad debts	10,000	
Discounts allowed	14,000	
Discounts received		11,000
Plant and machinery at cost (see note (iii))	240,000	
Provision for depreciation: Plant and machinery (see note (iv))		72,000
Motor vehicles at cost (see note (ii))	120,000	
Provision for depreciation: Motors (see note (iv))		48,000
Goodwill	200,000	
Development costs	24,000	
Trade debtors	188,000	
Trade creditors		45,000
Bank overdraft (repayable on demand)		7,000
Bills of exchange payable (all due within 1 year)		7,000
Debentures (redeemable in 3 years' time)		30,000
Preference dividend	12,000	
Ordinary dividend	40,000	
	<u>2,106,000</u>	<u>2,106,000</u>

#### Notes:

- (i) Stock of finished goods on 31 March 20X2 £163,000.
- (ii) Motor expenses and depreciation on motors to be apportioned: Distribution  $\frac{4}{5}$ , Administrative  $\frac{1}{5}$ .
- (iii) Plant and machinery depreciation to be apportioned: Cost of sales  $\frac{7}{10}$ , Distribution  $\frac{1}{5}$ , Administrative  $\frac{1}{10}$ .
- (iv) Depreciate the following fixed assets on cost: Motor vehicles 20 per cent, Plant and machinery 15 per cent.
- (v) Accrue corporation tax on profits of the year £38,000. This is payable on 31 December 20X2.

#### You are to draw up:

- (a) a detailed trading and profit and loss account for the year ended 31 March 20X2 for internal use, and
- (b) a profit and loss account for publication, also a balance sheet as at 31 March 20X2.

**12.5A** You are presented with the following information relating to Plott plc for the year to 31 March 20X1:

	£000
Bank overdraft	500
Called-up share capital (issued and fully paid)	2,100
Corporation tax (based on the profit for the year to 31 March 20X1)	900
Creditors	300
Debtors	200
Deferred taxation (credit)	80
Fixed assets: at cost	3,800
accumulated depreciation (at 31 March 20X1)	1,400
Fixed asset investments: at cost	100
Profit and loss account (at 1 April 20X0: credit)	1,200
Proposed dividend	420
Retained profit (for the year to 31 March 20X1)	585
Share premium account	315
Stocks: at cost (at 31 March 20X1)	400
Trade creditors	2,000
Trade debtors	5,300

*Additional information:*

- The above information has been obtained after the compilation of the company's profit and loss account for the year to 31 March 20X1.
- Details of fixed assets for the year to 31 March 20X1 are as follows:

	£000
(a) At cost	
At 1 April 20X0	3,400
Additions	600
Disposals	200
(b) Accumulated depreciation	
At 1 April 20X0	1,200
Additions	500
Disposals	300

- The market value of the fixed asset investments at 31 March 20X1 was £110,000. There were no purchases or sales of fixed asset investments during the year.
- Stocks comprise finished goods. The replacement cost of these goods is similar to the value indicated in the balance sheet.
- Assume that the basic rate of income tax is 25 per cent.
- The authorised share capital of the company consists of 2,500,000 ordinary shares of £1 each.

**Required:**

In so far as the information permits, prepare Plott plc's balance sheet as at 31 March 20X1 in accordance with the *minimum* requirements of the Companies Act 1985 and related accounting standards.

*Notes:*

- Where appropriate, formal notes must be attached to your balance sheet; and
- Detailed working should be submitted with your answer.

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**12.6A** The following information has been extracted from the books of Quire plc as at 30 September 20X1.

	£000	£000
Bank overdraft		2,400
Called-up share capital (ordinary shares of £1 each)		4,000
Deferred taxation		200
Delivery expenses	2,800	
Fixed assets: at cost	3,500	
accumulated depreciation (at 1 October 20X0)		1,100
Debentures held	100	
Debenture interest (net)		40
Interest payable	400	
Interim dividend paid	60	
Office expenses	3,000	
Other creditors		180
Other debtors	160	
Profit and loss account (at 1 October 20X0)		820
Purchases	12,000	
Sales		19,000
Stocks (at 1 October 20X0)	500	
Trade creditors		100
Trade debtors	5,320	
	<u>£27,840</u>	<u>£27,840</u>

*The following additional information is to be taken into account:*

- 1 Stocks at 30 September 20X1 were valued at £400,000.
- 2 All items in the above trial balance are shown net of value added tax.
- 3 At 30 September 20X1, £130,000 was outstanding for office expenses, and £50,000 had been paid in advance for delivery van licences.
- 4 Depreciation at a rate of 50 per cent is to be charged on the historic cost of the tangible fixed assets using the reducing balance method: it is to be apportioned as follows:

	%
Cost of sales	60
Distribution	30
Administration	<u>10</u>
	<u>100</u>

There were no purchases or sales of fixed assets during the year to 30 September 20X1.

- 5 The following rates of taxation are to be assumed:

	%
Corporation tax	35
Income tax	25
Value added tax	17.5

The corporation tax payable based on the profits for the year to 30 September 20X1 has been estimated at £80,000.

- 6 A transfer of £60,000 is to be made from the deferred taxation account.
- 7 The directors propose to pay a final ordinary dividend of 3p per share.

**Required:**

In so far as the information permits, prepare Quire plc's profit and loss account for the year to 30 September 20X1, and a balance sheet as at that date in accordance with the MINIMUM requirements of the Companies Act 1985 and related accounting standards.

*Note:* Formal notes to the accounts are NOT required, but detailed workings should be submitted with your answer.

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**12.7A** The following trial balance has been extracted from the books of Patt plc as at 31 March 20X0:

	<i>Dr</i> £000	<i>Cr</i> £000
Bank overdraft		25
Called-up share capital (ordinary shares of £1 each)		1,440
Creditors		55
Debtors	50	
Fixed assets: at cost	300	
accumulated depreciation (at 1 April 20X9)		120
Marketing expenses	100	
Office expenses	200	
Profit and loss account (at 1 April 20X9)		200
Production expenses	2,230	
Purchases (net of VAT)	3,700	
Sales (amounts invoiced, net of VAT)		7,000
Stocks (at 1 April 20X9)	130	
Trade creditors		160
Trade debtors	<u>2,290</u>	
	<u>£9,000</u>	<u>£9,000</u>

*Additional information:*

- 1 Following the preparation of the above trial balance, the following additional matters need to be taken into account:
  - (a) stock at 31 March 20X0 was valued at £170,000;
  - (b) at 31 March 20X0, £20,000 was owing for office expenses, and £15,000 had been paid in advance for marketing expenses;
  - (c) a customer had gone into liquidation owing the company £290,000; the company does not expect to recover any of this debt;
  - (d) the company decides to set up a provision for doubtful debts amounting to 5 per cent of the outstanding trade debtors as at the end of each financial year; and
  - (e) depreciation is to be charged on the fixed assets at a rate of 20 per cent on cost; it is to be apportioned as follows:

	%
Marketing	20
Office	10
Production	<u>70</u>
	<u>100</u>

*Note:* There were no acquisitions or disposals of fixed assets during the year to 31 March 20X0.

- 2 Corporation tax (based on the accounting profit for the year at a rate of 35 per cent) is estimated to be £160,000. The basic rate of income tax is assumed to be 25 per cent.
- 3 The directors are to recommend the payment of a dividend of 10p per ordinary share.

**Required:**

In so far as the information permits, prepare Patt plc's profit and loss account for the year to 31 March 20X0, and a balance sheet as at that date in accordance with the Companies Act 1985 and related accounting standards.

*Notes:*

- (i) Where appropriate, formal notes should be attached to your profit and loss account and balance sheet. However, a statement of accounting policies is NOT required.
- (ii) Detailed workings should also be submitted with your solution. They should be clearly designated as such, and they must not form part of your formal notes.

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# Published financial statements of limited companies: accompanying notes

## Learning objectives

After you have studied this chapter, you should be able to:

- describe the additional notes to published financial statements that are required by the Companies Acts
- describe the requirement to include a directors' report with the published financial statements

## Introduction

In this chapter, you'll learn about the notes that must be included when company financial statements are published and about the report that must be prepared by the directors to accompany the financial statements.

### 13.1 Notes to accompany the balance sheet

Companies may include as many notes as they wish when they publish their financial statements. However, there are some notes that the Companies Acts require them to include:

#### 1 Particulars of turnover

An analysis of turnover is required into:

- (a) each class of business and by
- (b) geographical markets. In addition, the amount of profit or loss before taxation, in the opinion of the directors, attributable to each class of business must be shown.

Such disclosure does not have to be made if it would be prejudicial to the business of the company. The fact of non-disclosure would have to be stated. An example of such a note might be as in Exhibit 13.1:

**Exhibit 13.1****Analysis of Turnover**

	Turnover £	Net Profit £
Motor vehicles	26,550,000	2,310,000
Aircraft	<u>58,915,000</u>	<u>4,116,000</u>
	<u>85,465,000</u>	<u>6,426,000</u>
<i>The geographical division of turnover is:</i>		£
UK		31,150,000
The Americas		43,025,000
Rest of the World		<u>10,290,000</u>
		<u>84,465,000</u>

It should be noted that these requirements were extended by SSAP 25: *Segmental reporting*, but only for:

- (a) plcs or parent undertakings that have one or more plcs as a subsidiary;
- (b) banking and insurance companies or groups;
- (c) private companies and other entities that exceed the criteria, *multiplied in each case by ten*, for defining a medium-sized company under Section 247 of the Companies Act 1985.

**See Section 11.2 for a table of these criteria.**

The Acts require that for each segment, turnover (analysed between sales to external customers and sales between segments), results and net assets should be disclosed. Geographical segmental analysis should, in the first instance, be on the basis of source (i.e. the geographical location of the supplying segment). In addition, turnover to third parties should be segmentally reported on the basis of destination (i.e. the geographical location of the receiving segment).

Where associated undertakings account for at least 20 per cent of the total results or net assets of the reporting entity, additional disclosure should be made in aggregate for all associated undertakings. This comprises segmental disclosure of the reporting entity's share of the aggregate profits or losses before tax, minority interests and extraordinary items of the associated undertakings, and the reporting entity's share of the net assets of the associated undertakings (including goodwill to the extent that it has not been written off) after attributing, where possible, fair values to the net assets at the date of acquisition of the interest in each associated undertaking.

## 2 Particulars of staff

- 1 Average number employed by the company (or by group in consolidated accounts), divided between categories of workers, e.g. between manufacturing and administration.
- 2 (a) Wages and salaries paid to staff.  
(b) Social security costs of staff.  
(c) Other pension costs for employees.
- 3 Number of employees (excluding those working wholly or mainly overseas) earning over £30,000 must be analysed in blocks of £5,000. Pension contributions, however, are not to be included.

Exhibit 13.2 is an example of a note concerning employees earning over £30,000.

**Exhibit 13.2**

The number of employees earning over £30,000 was 28, analysed as follows:

<i>Gross salaries</i>	<i>Number of employees</i>
£30,001–35,000	16
£35,001–40,000	8
£40,001–45,000	4
	<u>28</u>

Note how these requirements have become less material during the 20 years or so since they were included in the Companies Act. The equivalent threshold nowadays would be at least double the £30,000 cited in the Act.

**3 Directors' emoluments**

- Aggregate amounts of:
  - emoluments, including pension contributions and benefits in kind. Distinction to be made between those emoluments as fees and those for executive duties;
  - pensions for past directors;
  - compensation for loss of office.
- The chairman's emoluments and those of the highest-paid director, if paid more than the chairman. In both cases, pension contributions are to be excluded.
- Number of directors whose emoluments, excluding pension contributions, fall within each bracket of £5,000.
- Total amounts waived by directors and the number concerned.

The disclosures under 2 and 3 above are not needed for a company being neither a parent nor subsidiary undertaking where its directors' emoluments under 1 do not exceed £60,000. The disclosures under 2 and 3 are also not necessary for directors working wholly or mainly overseas.

An illustration is now given in Exhibit 13.3.

**Exhibit 13.3**

<i>Name</i>	<i>Fee (as directors)</i>	<i>Remuneration (as executives)</i>	<i>Pension contributions</i>
A (Chairman)	£5,000	£85,000	£20,000
B	£2,500	£95,000	£30,000
C	£2,500	£55,000	£15,000
D	£1,500	£54,000	£12,500
E	£1,500	£30,000	£10,000

*Note to accounts:*

Directors' remuneration: the amounts paid to directors were as follows:

Fees as directors	£13,000
Other emoluments, including pension contributions	£406,500

Emoluments of the Chairman – excluding pension contributions – amounted to £90,000, and those of the highest-paid director to £97,500. Other directors' emoluments were in the following ranges:

£30,001 – £35,000	1
£55,001 – £60,000	2

#### 4 Various charges to be shown as notes

- 1 Auditors' remuneration, including expenses.
- 2 Hire of plant and machinery.
- 3 Interest payable on:
  - (a) bank loans, overdrafts and other loans repayable by instalments or otherwise within five years;
  - (b) loans of any other kind.
- 4 Depreciation:
  - (a) amounts of provisions for both tangible and intangible assets;
  - (b) effect on depreciation of change of depreciation method;
  - (c) effect on depreciation of revaluation of assets.

#### 5 Income from listed investments

#### 6 Rents receivable from land, after deducting outgoings

#### 7 Taxation (see also FRS 16: *Current tax*)

- 1 Tax charges split between:
  - (a) UK corporation tax, and basis of computation;
  - (b) UK income tax, and basis of computation;
  - (c) irrecoverable VAT;
  - (d) tax attributable to franked investment income.
- 2 If relevant, split between tax on ordinary and tax on extraordinary activities.
- 3 Show, as component part, charge for deferred tax.
- 4 Any other special circumstances affecting tax liability.

#### 8 Extraordinary and exceptional items and prior period adjustments

See FRS 3: *Reporting financial performance*, which is dealt with in Chapter 11.

#### 9 Redemption of shares and loans

Show amounts set aside for these purposes.

#### 10 Earnings per share (listed companies only)

See FRS 14: *Earnings per share*, which is dealt with in Section 10.29.

#### 11 Statement showing movements on reserves

##### Activity 13.1

Why do you think these notes are required rather than leaving it up to companies to provide the information they believe to be worthwhile including?

## 13.2 The directors' report

When they request a full set of financial statements, in addition to the financial statements, the shareholders must also receive a directors' report. The contents of the report are given in the Companies Acts, but no formal layout is given. Such a report is additional to the notes, which have to be attached to the financial statements; the directors' report does not replace such notes.

- 1 A fair review of the development of the business of the company (and its subsidiaries) during the financial year and of the position at the end of the year. The dividends proposed and transfers to reserves should be given.
- 2 Principal activities of the company and any changes therein.
- 3 Post-balance sheet events, i.e. details of important events affecting the company (and its subsidiaries) since the end of the year.
- 4 Likely future developments in the business.
- 5 An indication of research and development carried on.
- 6 Significant changes in fixed assets. In the case of land, the difference between book and market values, if significant.
- 7 Political and charitable contributions; if, taken together, these exceed £200 there must be shown:
  - (a) separate totals for each classification;
  - (b) where political contributions exceeding £200 have been made, the names of recipients and amounts.
- 8 Details of any of the company's own shares which it has purchased.
- 9 Employees:
  - (a) statement concerning health, safety and welfare at work of company's employees;
  - (b) for companies with average workforce exceeding 250, details of employment of disabled people.
- 10 Directors:
  - (a) names of all persons who had been directors during any part of the financial year;
  - (b) their interests in contracts;
  - (c) for each director, the name; also:
    - (i) the number of shares held at the start of the year;
    - (ii) the number of shares held at the end of the year;
    - (iii) for each director elected in the year there shall also be shown shares held when elected;
    - (iv) all the above to show nil amounts where appropriate.

**Note:** Under the Companies Acts, the directors' report is considered during the external audit. If the external auditors' judgement is that the directors' report is inconsistent with the audited financial statements, this must be stated in the auditors' report.

### Activity 13.2

Why do you think the directors' report is audited?

Let's look at how all these requirements are enacted by working through two examples.

### 13.3 Illustrative company financial statements: worked example 1

F Clarke Ltd are specialist wholesalers. This is their trial balance at 31 December 20X4.

	<i>Dr</i> £	<i>Cr</i> £
Ordinary share capital: £1 shares		1,000,000
Share premium		120,000
General reserve		48,000
Profit and loss account as at 31.12.20X3		139,750
Stock: 31.12.20X3	336,720	
Sales		5,090,370
Purchases	2,475,910	
Returns outwards		121,220
Returns inwards	136,200	
Carriage inwards	6,340	
Carriage outwards	43,790	
Warehouse wages (average number of workers 59)	410,240	
Salespeople's salaries (average number of workers 21)	305,110	
Administrative wages and salaries	277,190	
Plant and machinery	610,000	
Motor vehicle hire	84,770	
Provisions for depreciation: plant and machinery		216,290
General distribution expenses	27,130	
General administrative expenses	47,990	
Directors' remuneration	195,140	
Ordinary dividend	375,000	
Rents receivable		37,150
Trade debtors	1,623,570	
Cash at bank and in hand	179,250	
Trade creditors (payable before 31.3.20X5)		304,570
Bills of exchange payable (payable 28.2.20X5)		57,000
	<u>7,134,350</u>	<u>7,134,350</u>

**Notes:**

- (a) Stock at 31.12.20X4: £412,780, consists of goods for resale.
- (b) Plant and machinery is apportioned: distributive 60 per cent; administrative 40 per cent.
- (c) Accrue auditors' remuneration: £71,000.
- (d) Depreciate plant and machinery: 20 per cent on cost.
- (e) Of the motor hire, £55,000 is for distributive purposes.
- (f) Corporation tax on profits, at a rate of 35 per cent, is estimated at £238,500, and is payable on 1.10.20X5.
- (g) All of the sales are of one type of goods. Net sales of £3,620,000 have been made in the UK with the remainder in Europe, and are shown net of VAT.
- (h) Pension contributions for staff amounted to £42,550 and social security contributions to £80,120. These figures are included in wages and salaries in the trial balance. No employee earned over £30,000.
- (i) Plant of £75,000 had been bought during the year.
- (j) Directors' remuneration has been as follows:

	£
Chairman	46,640
Managing Director	51,500
Finance Director	46,000
Marketing Director	43,000
	<u>187,140</u>

In addition each of them drew £2,000 as directors' fees. Pensions are the personal responsibility of directors.

**Required:**

Subject to the limits of the information given you, draw up a profit and loss account for the year ended 31 December 20X4, and a balance sheet as at that date. They should be in published form and accompanied by the necessary notes prescribed by statute.

**Answer to worked example 1**

<b>Workings</b>			
	£	£	£
Turnover: Sales	5,090,370	Cost of sales:	
Less Returns in	( 136,200)	Opening stock	336,720
	<u>4,954,170</u>	Add Purchases	2,475,910
		Less Returns out	( 121,220)
			<u>2,354,690</u>
		Add Carriage in	<u>6,340</u>
			<u>2,361,030</u>
		Less Closing stock	( 412,780)
			<u>2,284,970</u>
Distribution costs:		Administrative expenses:	
Warehouse wages	410,240	Wages and salaries	277,190
Salespeople's salaries	305,110	Motor hire	29,770
Carriage out	43,790	General expenses	47,990
General expenses	27,130	Directors' remuneration	150,140
Motor hire	55,000	Auditors' remuneration	71,000
Depreciation: plant	73,200	Depreciation: plant	<u>48,800</u>
			<u>624,890</u>
Marketing Director's remuneration	<u>45,000</u>		
	<u>959,470</u>		

**F Clarke Ltd**  
**Profit and Loss Account for the year ended 31 December 20X4**

	£	£
Turnover		4,954,170
Cost of sales		(2,284,970)
Gross profit		2,669,200
Distribution costs	959,470	
Administrative expenses	<u>624,890</u>	
		(1,584,360)
		1,084,840
Other operating income		<u>37,150</u>
Profit on ordinary activities before taxation		1,121,990
Tax on profit on ordinary activities		(238,500)
Profit on ordinary activities after taxation		883,490
Ordinary dividend		<u>(375,000)</u>
Retained profits for the year		<u>508,490</u>

**F Clarke Ltd**  
**Balance Sheet as at 31 December 20X4**

	£	£	£
<i>Fixed assets</i>			
Tangible assets: Plant and machinery			271,710
<i>Current assets</i>			
Stock: Finished goods and goods for resale		412,780	
Debtors: Trade debtors		1,623,570	
Cash at bank and in hand		<u>179,250</u>	
		2,215,600	
<i>Creditors: amounts falling due within one year</i>			
Trade creditors	304,570		
Bills of exchange payable	57,000		
Other creditors including taxation and social security	<u>309,500</u>		
		(671,070)	
<i>Net current assets</i>			(1,544,530)
<i>Total assets less current liabilities</i>			<u>1,816,240</u>
<i>Capital and reserves</i>			£
Called-up share capital			1,000,000
Share premium account			120,000
Other reserves:			
General reserve			48,000
Profit and loss			<u>648,240</u>
			<u>1,816,240</u>

## NOTES TO THE ACCOUNTS

### 1 Turnover

This is the value, net of VAT, of goods of a single class of business. Turnover may be analysed as follows:

	£
UK	3,977,547
Europe	<u>976,623</u>
	<u>4,954,170</u>

### 2 Employees

Average number of workers was:

Warehousing	59
Sales	<u>21</u>
	<u>80</u>

Remuneration of employees was:

	£
Wages and salaries	869,870
Social security costs	80,120
Pension contributions	<u>42,550</u>
	<u>992,540</u>



**3 Directors' remuneration**

The amounts paid to directors were as follows:

	£
Fees as directors	8,000
Other emoluments	187,140

Emoluments of the Chairman amounted to £46,640, and those of the highest-paid director £51,500. Other directors' emoluments were in the following ranges:

£40,001–45,000	1
£45,001–50,000	1

**4 Operating profit is shown after charging**

	£
Auditors' remuneration	71,000
Hire of motors	84,770

**5 Fixed assets**

Plant and machinery	£	£
Cost at 1.1.20X4	535,000	
Additions	<u>75,000</u>	
		610,000
Depreciation to 31.12.20X3	216,290	
Charge for the year	<u>122,000</u>	
		(338,290)
		<u>271,710</u>

**6 Other creditors including taxation**

	£	£
Auditors' remuneration	71,000	
Corporation tax	<u>238,500</u>	
		<u>309,500</u>

## 13.4 Illustrative company financial statements: worked example 2

The trial balance of Quartz plc on 31 December 20X3 was as follows:

	<i>Dr</i> £000	<i>Cr</i> £000
Preference share capital: £1 shares		200
Ordinary share capital: £1 shares		1,000
Exchange reserve		75
General reserve		150
Profit and loss account 31.12.20X2		215
Sales		5,095
Purchases	2,196	
Carriage inwards	38	
Stock 31.12.20X2	902	
Wages (adding value to goods)	35	
Wages: warehousing	380	
Wages and salaries: administrative	120	
Wages and salaries: sales	197	
Motor expenses	164	
Bad debts	31	
Debenture interest	40	
Preference dividend	20	
Ordinary dividend	500	
Bank overdraft interest	19	
General distribution expenses	81	
General administrative expenses	73	
Directors' remuneration	210	
Investments in undertakings in which the company has a participating interest	340	
Income from shares in undertakings in which the company has a participating interest		36
Discounts allowed and received	55	39
Buildings: at cost	1,200	
Plant and machinery: at cost	330	
Motor vehicles: at cost	480	
Provisions for depreciation:		
Land and buildings		375
Plant and machinery		195
Motors		160
Goodwill	40	
Patents, licences and trade marks	38	
Trade debtors and creditors	864	392
Bank overdraft (repayable any time)		21
Debentures 10 per cent		400
	<u>8,353</u>	<u>8,353</u>

Notes:

- (a) Stock at 31.12.20X3: £1,103,000 at cost.
- (b) Motor expenses and depreciation on motors to be apportioned: distribution 75 per cent; administrative 25 per cent.
- (c) Depreciation on buildings and plant and machinery to be apportioned: distribution 50 per cent; administrative 50 per cent.
- (d) Depreciate on cost: motor vehicles 25 per cent; plant and machinery 20 per cent.
- (e) Accrued corporation tax on profits of the year £266,000. This is payable 1 October 20X4.
- (f) During the year new vehicles were purchased at a cost of £60,000.

- (g) During June 20X3 one of the buildings, which had originally cost £130,000, and which had a written-down value at the date of the sale of £80,000, was sold for £180,000. Depreciation on buildings to be charged against the year's profits £60,000. The buildings are revalued by B & Co., Chartered Surveyors, at £1,500,000 at 31.12.20X3 (and this figure is to be included in the financial statements).
- (h) Directors' remuneration was as follows:

	£
Marketing	42,000
Chairman	37,000
Managing	61,000
Finance	50,000
	<u>190,000</u>

In addition each director drew £5,000 fees.

- (i) Of the goodwill, 50 per cent is to be written off during this year, and 50 per cent in the following year.
- (j) The debentures are to be redeemed in five equal annual instalments, starting in the following year 20X4.
- (k) The investments are in listed companies with a market value at 31 December 20X3 of £438,000.
- (l) Accrue auditors' remuneration, including expenses, £7,000.

**You are required to prepare a balance sheet as at 31 December 20X3. It should:**

- (a) conform to the requirements of the Companies Act 1985;
- (b) conform to the relevant accounting standards;
- (c) give the notes necessary to the accounts.

### Answer to worked example 2

<b>Workings</b>			<i>Dist.</i>	<i>Admin.</i>
	£000		£000	£000
Cost of sales:		Wages	577	120
Opening stock	902	Motor expenses	123	41
Add Purchases	2,196	General	81	73
Add Carriage in	<u>38</u>	Depreciation: plant	33	33
	3,136	motors	90	30
Less Closing stock	(1,103)	buildings	30	30
	2,033	Directors	47	163
Wages (added value)	35	Auditors' remuneration		7
	<u>2,068</u>	Discounts (net) 55–39		16
		Bad debts		<u>31</u>
			<u>981</u>	<u>544</u>

**Quartz plc**  
**Profit and Loss Account for the year ended 31 December 20X4**

	<i>£000</i>	<i>£000</i>
Turnover		5,095
Cost of sales		(2,068)
Gross profit		3,027
Distribution costs	981	
Administrative expenses	<u>544</u>	
		(1,525)
		1,502
Income from shares in undertakings in which the company has a participating interest		36
		1,538
Interest payable and similar charges		( 59)
Profit on ordinary activities before taxation		1,479
Tax on profit on ordinary activities		( 266)
Profit for the year on ordinary activities after taxation		1,213
Goodwill written off	20	
Dividends paid	<u>520</u>	
		(540)
Retained profits for the year		<u>673</u>

**Quartz plc**  
**Balance Sheet as at 31 December 20X3**

	<i>£000</i>	<i>£000</i>	<i>£000</i>
<i>Fixed assets</i>			
<i>Intangible assets</i>			
Patents, licences and trade marks		38	
Goodwill		<u>20</u>	
		58	
<i>Tangible assets</i>			
Buildings	1,500		
Plant and machinery	69		
Vehicles	<u>200</u>		
		1,769	
<i>Investments</i>			
Shares in undertakings in which the company has a participating interest		<u>340</u>	
			2,167
<i>Current assets</i>			
Stock	1,103		
Trade debtors	<u>864</u>		
		1,967	
<i>Creditors: amounts falling due within one year</i>			
Debenture loans	80		
Bank overdraft	21		
Trade creditors	392		
Other creditors	<u>273</u>		
		(766)	
Net current assets			1,201
			3,368
<i>Creditors: amounts falling due after more than one year</i>			
Debenture loans			( 320)
			<u>3,048</u>
<i>Capital and reserves</i>			
Called-up share capital			1,200
Revaluation reserve			735
Profit and loss account			888
Other reserves			<u>225</u>
			<u>3,048</u>

**NOTES TO THE ACCOUNTS****1 Share capital called up**

	£
200,000 10 per cent preference shares of £1 each	200,000
1,000,000 ordinary shares of £1 each	1,000,000
	<u>1,200,000</u>

**2 Accounting policies**

Goodwill has been written off £20,000 against this year. The directors intend to write off the remaining £20,000 against next year's profits.

**3 Tangible assets**

	<i>Buildings</i> £000	<i>Plant</i> £000	<i>Vehicles</i> £000
Cost at 1.1.20X4	1,330	330	480
Disposals (at cost)	( 130)	–	–
Adjustment for revaluation	<u>735</u>		
	1,935	<u>330</u>	<u>480</u>
Depreciation at 1.1.20X4	425	195	160
Provided in year	60	66	120
Disposals	<u>( 50)</u>		
	435	<u>261</u>	<u>280</u>
Net book values	1,500	69	200

**4 Investments**

The market value of investments at 31 December 20X3 was £438,000.

**5 Ten per cent debenture loans**

These are redeemable in five equal annual instalments, starting next year. Interest of £40,000 is charged in this year's accounts.

**6 Other creditors including taxation**

	£
Auditors' remuneration	7,000
Corporation tax based on year's profits	266,000
	<u>273,000</u>

**7 Other reserves**

	£
Exchange reserve	75,000
General reserve	150,000
	<u>225,000</u>

**8 Directors' remuneration**

The amounts paid to directors were as follows:

	£	£
Fees as directors	20,000	
Other emoluments	<u>190,000</u>	210,000

Emoluments of the chairman amounted to £42,000 and those of the highest-paid director £66,000. Other directors' emoluments were in the following ranges:

£45,001–£50,000	1
£50,001–£55,000	1

**9 Operating profit is shown after charging**

	£
Auditors' remuneration	7,000
Bank overdraft interest	19,000

## Learning outcomes

You should now have learnt:

- 1 The Companies Acts require that additional notes be prepared and included with the published financial statements.
- 2 In some cases, the contents of these notes have been extended through the issuing of an accounting standard. For example, SSAP 25: *Segmental reporting* extended the disclosure required of many entities concerning segmental performance.
- 3 Along with the notes to the financial statements, a directors' report must be presented which summarises the activities and performance of the entity, along with specific details on a number of matters, including directors' shareholdings and information concerning significant changes in fixed assets.
- 4 The notes to the financial statements and the directors' report are both audited and the views of the auditors on their content are included in the auditors' report which is attached to companies' published annual reports.

## Answers to activities

- 13.1 These items are all of a type considered to be important and likely to influence the economic decisions of the users of financial statements. They are subject to review by the auditors of the company in the same way as the financial statements.
- 13.2 The directors' report contains a review of the company's performance, activities and future intentions. It also contains many other qualitative and quantitative items of information considered likely to influence the economic decisions of the users of financial statements. The audit report indicates whether, in the opinion of the auditors, the directors' report presents a true and fair view of the items contained within it. If the directors' report was not audited, unscrupulous directors could paint pictures concerning the company that gave an overly favourable impression of its performance, so biasing the judgement of those taking economic decisions based on its content.

## Review questions

**13.1** The following trial balance of X Limited, a non-listed company, has been extracted from the books after the preparation of the profit and loss and appropriation accounts for the year ended 31 March 20X7.

	£000	£000
Ordinary share capital – authorised, allotted and called-up fully paid shares of £1 each		1,000
12% debentures (repayable in 9 years)		500
Deferred taxation		128
Provisions for depreciation:		
Plant and machinery at 31 March 20X7		650
Freehold properties at 31 March 20X7		52
Vehicles at 31 March 20X7		135
Investments (listed), at cost	200	
Trade debtors and prepayments	825	
Corporation tax		270
Proposed final dividend		280
Tangible fixed assets:		
Freehold properties at 31 March 20X7	1,092	
Plant and machinery at 31 March 20X7	1,500	
Vehicles at 31 March 20X7	420	
Profit and loss account – balance at 31 March 20X7		356
Share premium account		150
Trade creditors and accruals		878
Research and development costs	35	
Stocks:		
Raw materials	200	
Work in progress	50	
Finished goods	250	
Bank balance	439	
Revaluation reserve on freehold properties		612
	<u>5,011</u>	<u>5,011</u>

You are also provided with the following information:

### 1 Investments

The listed investments consist of shares in W plc quoted on the Stock Exchange at £180,000 on 31 March 20X7. This is not considered to be a permanent fall in the value of this asset.

### 2 Trade debtors and prepayments

The company received notice, during April 20X7, that one of its major customers, Z Limited, had gone into liquidation. The amount included in trade debtors and prepayments is £225,000 and it is estimated that a dividend of 24p in the £ will be paid to unsecured creditors.

### 3 Taxation

#### (a) Corporation tax

The figure in the trial balance is made up as follows:

	£000
Based on profits for the year	174
Tax on exceptional item (see Note 4)	96
	<u>270</u>

#### (b) Deferred taxation

A transfer of £50,000 was made from the profit and loss account during the year ended 31 March 20X7.

**4 Tangible fixed assets**

- (a) In arriving at the profit for the year, depreciation of £242,000 was charged, made up of freehold properties £12,000, plant and machinery £150,000 and vehicles £80,000.
- (b) During the year to 31 March 20X7, new vehicles were purchased at a cost of £200,000.
- (c) During March 20X7, the directors sold one of the freehold properties which had originally cost £320,000 and which had a written-down value at the date of the sale of £280,000. A profit of £320,000 on the sale, which was regarded as exceptional, has already been dealt with in arriving at the profit for the year. The estimated corporation tax liability in respect of the capital gain will be £96,000, as shown in Note 3. After this sale, the directors decided to have the remaining freehold properties revalued, for the first time, by Messrs V & Co, Chartered Surveyors and to include the revalued figure of £1,040,000 in the 20X7 accounts.

**5 Research and development costs**

The company carries out research and development and accounts for it in accordance with the relevant accounting standard. The amount shown in the trial balance relates to development expenditure on a new product scheduled to be launched in April 20X7. Management is confident that this new product will earn substantial profits for the company in the coming years.

**6 Stocks**

The replacement cost of the finished goods, if valued at 31 March 20X7, would amount to £342,000.

**You are required to** prepare a balance sheet at 31 March 20X7 to conform to the requirements of the Companies Acts and relevant accounting standards in so far as the information given allows. The vertical format must be used.

The notes necessary to accompany this statement should also be prepared.

Workings should be shown, but comparative figures are not required.

(Chartered Institute of Management Accountants)

**13.2** The following information has been extracted from the books of account of Billinge plc as at 30 June 20X6:

	<i>Dr</i> £000	<i>Cr</i> £000
Administration expenses	242	
Cash at bank and in hand	157	
Cash received on sale of fittings		3
Corporation tax (over-provision for the previous year)		10
Deferred taxation		60
Depreciation on fixtures, fittings, tools and equipment (1 July 20X5)		132
Distribution costs	55	
Factory closure costs	30	
Fixtures, fittings, tools and equipment at cost	340	
Profit and loss account (at 1 July 20X5)		40
Purchase of equipment	60	
Purchases of goods for resale	855	
Sales (net of VAT)		1,500
Share capital (500,000 authorised, issued and fully paid ordinary shares of £1 each)		500
Stock (at 1 July 20X5)	70	
Trade creditors		64
Trade debtors	500	
	<u>£2,309</u>	<u>£2,309</u>





**Additional information:**

- 1 The company was incorporated in 20X0.
- 2 The stock at 30 June 20X6 (valued at the lower of cost or net realisable value) was estimated to be worth £100,000.
- 3 Fixtures, fittings, tools and equipment all related to administrative expenses. Depreciation is charged on them at a rate of 20 per cent per annum on cost. A full year's depreciation is charged in the year of acquisition, but no depreciation is charged in the year of disposal.
- 4 During the year to 30 June 20X6, the company purchased £60,000 of equipment. It also sold some fittings (which had originally cost £20,000) for £3,000 and for which depreciation of £15,000 had been set aside.
- 5 The corporation tax based on the profits for the year at a rate of 35 per cent is estimated to be £100,000. A transfer of £40,000 is to be made to the deferred taxation account.
- 6 The company proposes to pay a dividend of 20p per ordinary share.
- 7 The standard rate of income tax is 30 per cent.

**Required:**

In so far as the information permits, prepare Billinge plc's profit and loss account for the year to 30 June 20X6, and a balance sheet as at that date in accordance with the Companies Acts and appropriate accounting standards.

*(Association of Accounting Technicians)*

**13.3A** Cosnett Ltd is a company principally involved in the manufacture of aluminium accessories for camping enthusiasts. Its trial balance at 30 September 20X5 was:

	£	£
Issued ordinary share capital (£1 shares)		600,000
Retained profit at 1 October 20X4		625,700
Debentures redeemable 20X9		150,000
Bank loan		25,000
Plant and machinery at cost	1,475,800	
Accumulated depreciation to 30 September 20X5		291,500
Investments in UK companies at cost	20,000	
Turnover		3,058,000
Dividends from investments		2,800
Loss arising on factory closure	86,100	
Cost of sales	2,083,500	
Political and charitable contributions	750	
Distribution costs	82,190	
Salaries of office staff	42,100	
Directors' emoluments	63,000	
Rent and rates of offices	82,180	
Hire of plant and machinery	6,700	
Travel and entertainment expenses	4,350	
General expenses	221,400	
Trade debtors	396,100	
Trade creditors and accruals		245,820
Stocks	421,440	
Bank	17,950	
Interim dividend paid	21,000	
Interest charged	19,360	
Provision for deferred taxation		45,100
	<u>5,043,920</u>	<u>5,043,920</u>

You are provided with the following additional information:

- (a) The company's shares are owned, equally, by three brothers: John, Peter and Henry Phillips; they are also the directors.
- (b) The bank loan is repayable by five annual instalments of £5,000 commencing 31 December 20X5.
- (c) The investments were acquired with cash, surplus to existing operating requirements, which will be needed to pay for additional plant the directors plan to acquire early in 20X6.
- (d) On 1 January 20X5 the company closed a factory which had previously contributed approximately 20 per cent of the company's total production requirements.
- (e) Trade debtors include £80,000 due from a customer who went into liquidation on 1 September 20X5; the directors estimate that a dividend of 20p in the £ will eventually be received.
- (f) Trade creditors and accruals include:
  - (i) £50,000 due to a supplier of plant, of which £20,000 is payable on 1 January 20X6 and the remainder at the end of the year;
  - (ii) accruals totalling £3,260.
- (g) The mainstream corporation tax liability for the year is estimated at £120,000.
- (h) The directors propose to pay a final dividend of 10.5p per share and to transfer £26,500 to the deferred tax account.

**Required:**

The profit and loss account of Cosnett Ltd for the year to 30 September 20X5 and balance sheet at that date together with relevant notes attached thereto. The accounts should comply with the minimum requirements of the Companies Acts and accounting standards so far as the information permits.

*(Institute of Chartered Secretaries and Administrators)*

**13.4A** The following trial balance has been extracted from the books of Arran plc as at 31 March 20X7:

	£000	£000
Administrative expenses	95	
Called-up share capital (all ordinary shares of £1 each)		200
Cash at bank and in hand	25	
Debtors	230	
Deferred taxation (at 1 April 20X6)		60
Distribution costs	500	
Fixed asset investments	280	
Income from fixed asset investments		12
Interim dividend paid	21	
Overprovision of last year's corporation tax		5
Land and buildings at cost	200	
Land and buildings: accumulated depreciation at 1 April 20X6		30
Plant and machinery at cost	400	
Plant and machinery: accumulated depreciation at 1 April 20X6		170
Profit and loss account (at 1 April 20X6)		229
Profit on exceptional item		50
Purchases	1,210	
Sales		2,215
Stocks at 1 April 20X6	140	
Trade creditors		130
	<u>£3,101</u>	<u>£3,101</u>



**Additional information:**

- 1 Stocks at 31 March 20X7 were valued at £150,000.
- 2 Depreciation for the year to 31 March 20X7 is to be charged against administrative expenses as follows:
 

	£000
Land and buildings	5
Plant and machinery	40
- 3 Assume that the basic rate of income tax is 30 per cent.
- 4 Corporation tax of £180,000 is to be charged against profits on ordinary activities for the year to 31 March 20X7.
- 5 £4,000 is to be transferred to the deferred taxation account.
- 6 The company proposes to pay a final ordinary dividend of 30p per share.

**Required:**

In so far as the information permits, prepare the company's profit and loss account for the year to 31 March 20X7 and a balance sheet as at that date in accordance with the Companies Acts and related accounting standards. (Note: Profit and loss account and balance sheet notes are not required, but you should show the basis and computation of earnings per share at the foot of the profit and loss account, and your workings should be submitted.)

(Association of Accounting Technicians)

**13.5A** The following trial balance has been extracted from the books of account of Greet plc as at 31 March 20X8

	<i>Dr</i> £000	<i>Cr</i> £000
Administrative expenses	210	
Called-up share capital (ordinary shares of £1 fully paid)		600
Debtors	470	
Cash at bank and in hand	40	
Corporation tax (overprovision in 20X7)		25
Deferred taxation (at 1 April 20X7)		180
Distribution costs	420	
Exceptional item		60
Fixed asset investments	560	
Investment income		72
Plant and machinery: at cost	750	
accumulated depreciation (at 31 March 20X8)		220
Profit and loss (at 1 April 20X7)		182
Purchases	960	
Stock (at 1 April 20X7)	140	
Trade creditors		261
Turnover		1,950
	<u>£3,550</u>	<u>£3,550</u>

**Additional information:**

- 1 Stock at 31 March 20X8 was valued at £150,000.
- 2 The following items are *already included* in the balances listed in the above trial balance:

	<i>Distribution costs</i> £000	<i>Administrative expenses</i> £000
Depreciation (for the year to 31 March 20X8)	27	5
Hire of plant and machinery	20	15
Auditors' remuneration	–	30
Directors' emoluments	–	45

3 The following rates of taxation are to be assumed:

	%
Corporation tax	35
Income tax	27

- 4 The corporation tax charge based on the profits for the year is estimated to be £52,000.
- 5 A transfer of £16,000 is to be made to the credit of the deferred taxation account.
- 6 The exceptional item relates to the profit made on the disposal of a factory in Belgium following the closure of the company's entire operations in that country.
- 7 The company's authorised share capital consists of 1,000,000 ordinary shares of £1 each.
- 8 A final ordinary payment of 50p per share is proposed.
- 9 There were no purchases or disposals of fixed assets during the year.
- 10 The market value of the fixed assets investments as at 31 March 20X8 was £580,000. There were no purchases or sales of such investments during the year.

**Required:**

In so far as the information permits, prepare the company's published profit and loss account for the year to 31 March 20X8 and a balance sheet as at that date in accordance with the Companies Acts and with related accounting standards.

Relevant notes to the profit and loss account and balance sheet and detailed workings should be submitted with your answer, but a statement of the company's accounting policies is not required.

*(Association of Accounting Technicians)*

**13.6** The accountant of Scampion plc, a retailing company listed on the London Stock Exchange, has produced the following draft financial statements for the company for the year to 31 May 20X7.

**Profit and Loss Account for year to 31 May 20X2**

	£000	£000
Sales		3,489
Income from investments		15
		<u>3,504</u>
Purchases of goods and services	1,929	
Value added tax paid on sales	257	
Wages and salaries including pension scheme	330	
Depreciation	51	
Interest on loans	18	
General administration expenses		
– Shops	595	
– Head office	<u>25</u>	
		<u>3,205</u>
Net profit for year		299
Corporation tax at 40%		<u>120</u>
Profit after tax for year		<u><u>179</u></u>





### Balance Sheet at 31 May 20X2

	£000	£000
<i>Fixed assets</i>		
Land and buildings		1,178
Fixtures, fittings, equipment and motor vehicles		194
<i>Investments</i>		<u>167</u>
		1,539
<i>Current assets</i>		
Stock	230	
Debtors	67	
Cash at bank and in hand	<u>84</u>	
	381	
<i>Current liabilities</i>		
Creditors	<u>487</u>	
		( 106)
		<u>1,433</u>
Ordinary share capital (£1 shares)		660
Reserves		703
Loans		<u>70</u>
		<u>1,433</u>

You discover the following further information:

(i) Fixed assets details are as follows:

	Cost £000	Depreciation £000	Net £000
Freehold land and buildings	1,212	34	1,178
Fixtures, fittings and equipment	181	56	125
Motor vehicles	137	68	69

Purchases of fixed assets during the year were freehold land and buildings £50,000, fixtures, fittings and equipment £40,000, motor vehicles £20,000. The only fixed asset disposal during the year is referred to in note (x). Depreciation charged during the year was £5,000 for freehold buildings, £18,000 for fixtures, fittings and equipment and £28,000 for motor vehicles. Straight-line depreciation method is used assuming the following lives: Freehold buildings 40 years, fixtures, fittings and equipment 10 years and motor vehicles 5 years.

- (ii) A dividend of 10 pence per share is proposed.
- (iii) A valuation by Bloggs & Co Surveyors shows the freehold land and buildings to have a market value of £1,350,000.
- (iv) Loans are:  
£20,000 bank loan with a variable rate of interest repayable by 30 September 20X2;  
£50,000 12 per cent debenture repayable 20X6;  
£100,000 11 per cent debenture repaid during the year.  
There were no other loans during the year.
- (v) The income from investments is derived from fixed asset investments (shares in related companies) £5,000 and current asset investment (government securities) £10,000.
- (vi) At the balance sheet date the shares in related companies (cost £64,000) are valued by the directors at £60,000. The market value of the government securities is £115,000 (cost £103,000).
- (vii) After the balance sheet date but before the financial statements are finalised there is a very substantial fall in share and security prices. The market value of the government securities had fallen to £50,000 by the time the directors signed the accounts. No adjustment has been made for this item in the accounts.
- (viii) Within two weeks of the balance sheet date a notice of liquidation was received by Scampion plc concerning one of the company's debtors. £45,000 is included in the balance sheet for this

debtor and enquiries reveal that nothing is likely to be paid to any unsecured creditor. No adjustment has been made for this item in the accounts.

- (ix) The corporation tax charge is based on the accounts for the year and there are no other amounts of tax owing by the company.
- (x) Reserves at 31 May 20X1 were:

	£
Revaluation reserve	150,000
Share premium account	225,000
Profit and loss account	149,000

The revaluation reserve represents the after-tax surplus on a property which was valued in last year's balance sheet at £400,000 and sold during the current year at book value.

**Required:**

A profit and loss account for the year to 31 May 20X2 and a balance sheet at that date for Scampion plc complying with the Companies Acts in so far as the information given will allow.

Ignore advance corporation tax.

*(Association of Chartered Certified Accountants)*

**13.7A** The Companies Acts and accounting standards require a great deal of information to be disclosed in a company's annual report and accounts.

**Required:**

List the disclosure requirements for the following items:

- (a) employees;
- (b) directors' emoluments; and
- (c) fixed assets.

*(Association of Accounting Technicians)*

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Cash flow statements

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the purpose of cash flow information
- explain the difference between cash flow and profit
- prepare a cash flow statement for a company following the format given in FRS 1
- explain the differences between the requirements of FRS1 and IAS 7
- prepare a cash flow statement for a company following the format given in IAS 7

## Introduction

In this chapter, you'll build on what you learnt in *Business Accounting 1* relating to cash flow statements. You will learn more about the nine standard headings within a cash flow statement prepared on the basis of FRS 1 and be reminded of the layouts as given in FRS 1 and shown how to use them in practice. You'll also be reminded of the layout of a cash flow statement prepared on the basis of IAS 7.

### 14.1 Background

*Business Accounting 1* introduced cash flow statements and this chapter moves on to consider in more detail the two accounting standards relating to these statements – FRS 1: *Cash flow statements* and the equivalent informational accounting standard, IAS 7: *Cash flow statements*. We will look first at FRS 1.

FRS 1 requires that a cash flow statement be prepared according to prescribed formats for all companies other than those exempt from doing so, either because they are 'small', as defined by the Companies Act (*see* Section 11.2), or because they are subsidiary undertakings and the group they belong to is publishing group financial statements in the European Union. The standard requires that the statement be included as a primary statement within the financial statements, i.e. it has the same status as the profit and loss account and the balance sheet.

### 14.2 FRS 1: Standard headings

The objective of FRS 1 is to ensure that reporting entities report the cash generation and cash absorption for a period by highlighting the significant components of cash flow in a way that facilitates comparison of the cash performance of different businesses; and that they provide

information that assists in the assessment of their liquidity, solvency and financial adaptability. For this reason, the statement must show the flows of cash and cash equivalents for the period under the headings:

- 1 operating activities
- 2 dividends from joint ventures and associates
- 3 returns on investments and servicing of finance
- 4 taxation
- 5 capital expenditure and financial investment
- 6 acquisitions and disposals
- 7 equity dividends paid
- 8 management of liquid resources
- 9 financing.

The first seven headings should be in the order shown. The other two can be combined under a single heading provided that each of their cash flows are shown separately and separate sub-totals are given. Operating cash flows can be presented by either the *direct* method (showing the relevant constituent cash flows) or the *indirect* method (calculating operating cash flows by adjustment to the operating profit reported in the profit and loss account).

The standard indicates in which section various items are to be located and these are described in Sections 14.4–14.11. Further guidance concerning where items appear in the statement can be seen in the examples presented later in this chapter.

The standard requires that either adjoining the statement, or in a separate note, reconciliations are presented between operating profit and net cash flow from operating activities for the period, and between the movement in cash in the period and the movement in net debt. Neither reconciliation forms part of the statement. The reconciliation to net debt should identify the cash flows of the entity, the acquisition or disposal of subsidiary undertakings (excluding cash balances), other non-cash changes, and the recognition of changes in the market value and exchange rate movements.

### 14.3 FRS 1 and cash flow

Cash flow is defined in paragraph 2 of FRS 1 as ‘an increase or decrease in an amount of cash’. Anything that falls outside this definition is not a cash flow and should not appear in the statement (though it could appear in the notes).

Cash is defined as ‘cash in hand and deposits repayable on demand with any qualifying financial institution, less overdrafts from any qualifying financial institution repayable on demand’.

‘Deposits repayable on demand’ are deposits that can be withdrawn at any time without notice and without penalty or if a maturity or period of notice of not more than 24 hours or one working day has been agreed.

Cash includes cash in hand and deposits denominated in foreign currencies.

### 14.4 FRS 1: Operating activities and cash flows

**Operating activities** are generally the cash effects of transactions and other events relating to operating or trading activities. The net cash flow from operating activities represents the net increase or decrease in cash resulting from the operations shown in the profit and loss account in arriving at operating profit.

The reconciliation between operating profit and net cash flow from operating activities for the period should disclose separately the movements in stocks, debtors, and creditors related to operating activities, and other differences between cash flows and profits. It should also show



separately the difference between dividends received and results taken into account for equity accounted entities.

In the cash flow statement, **operating cash flows** may be shown using either the indirect method or the direct method. Using the **indirect method**, it would be laid out in a manner similar to that shown in Exhibit 14.1.

### Exhibit 14.1

	£
Operating profit	12,000
Depreciation charges	500
Loss on sale of tangible fixed assets	10
Increase in stocks	( 200)
Increase in debtors	( 100)
Increase in creditors	<u>300</u>
Net cash inflow from operating activities	<u>12,510</u>

FRS 1 requires that a reconciliation be shown between the net cash flow from operating activities and the operating profit as shown in the profit and loss account, which is precisely what is produced if the *indirect* method is adopted. Consequently, by adopting the indirect method, as the detailed information is to be included in a reconciliation, the main part of the statement may only include a single line 'net cash flow from operating activities'. Thus, instead of being included in the body of the cash flow statement, the details shown in Exhibit 14.1 would be included in the notes to the statement. When the indirect method is adopted, no details of the equivalent *direct* method analysis is required.

On the other hand, when the **direct method** is adopted for preparation of the statement, the reconciliation (i.e. the *indirect* method analysis) must also be prepared and included as a note to the statement. The direct method would produce an analysis in the cash flow statement similar to that shown in Exhibit 14.2.

### Exhibit 14.2

	£
<i>Operating activities</i>	
Cash received from customers	120,000
Cash payments to suppliers	( 40,000)
Cash paid to and on behalf of employees	( 60,000)
Other cash payments	( <u>7,490</u> )
Net cash inflow from operating activities	<u>12,510</u>

It is generally easier for an entity to adopt the indirect method – the figures are readily available from the profit and loss account and balance sheet data. The direct method, on the other hand, requires that the Cash Book is analysed. Despite there being much more work involved in preparing it, in Appendix III to FRS 1, the ASB encourages the use of the direct method when the potential benefits to users outweigh the costs of doing so – it does help provide a far clearer view of cash flow than the bookkeeping adjustments to profit that are undertaken under the indirect method.

**Note:** In an examination, if sufficient information on cash flows is provided for you to adopt the *direct* method, you should assume that is the approach to take – however, you would still need to adopt the *indirect* method when completing the reconciliation if that was also required by the question.

## 14.5 FRS 1: Dividends from joint ventures and associates

This category was added following the issue of FRS 9: *Associates and joint ventures* in 1997. It was felt appropriate to show these dividends as a separate item as they were not part of operating income and they have a different nature from that of dividends from a company's returns on investment.

## 14.6 FRS 1: Returns on investment and servicing of finance

This section concerns receipts resulting from the ownership of an investment and payments to providers of finance, non-equity shareholders, and minority interests.

Generally, the standard endeavours to classify all cash flows according to the substance of the transaction that gave rise to them. As a result, this section of the statement excludes any item that may be classified under one of the other headings. For example, payments to *non-equity* shareholders (e.g. holders of preference shares in the entity) are included in this section, but payments to *equity* shareholders appear in the 'equity dividends paid' section.

Among the cash inflows included in this section are interest and dividends received (other than dividends from equity accounted entities whose results are included as part of operating profit). Cash outflows in this section include interest paid; finance costs, as defined under FRS 4: *Capital instruments* – see Chapter 10; the interest element of finance lease rental payments, as defined under SSAP 21: *Accounting for leases and hire purchase contracts* – see Chapter 2; and dividends paid to minority interests and to non-equity shareholders of the entity.

## 14.7 FRS 1: Taxation

This section includes cash flows to and from taxation authorities in respect of the reporting entity's revenue and capital profits. Other tax cash flows should be included under the same heading as the cash flow which gave rise to them – property taxes, such as rates, and VAT, for example, are seen as relating to 'operating activities'. Thus, the net amount of VAT paid to or received from the tax authorities is included under that section. The exception to this arises when VAT is irrecoverable, in which case it is added to the originating transaction value and not distinguished from it within the cash flow statement.

## 14.8 FRS 1: Capital expenditure and financial investment

**Capital expenditure** means *buying and selling fixed assets*. **Financial investment** means *buying and selling shares held as investments*. Included in this section are cash flows relating to the acquisition or disposal of any fixed asset other than those required to be classified under the 'acquisitions and disposals' section of the statement, and those relating to any current asset investment not included in the 'management of liquid resources' section.

The heading can be reduced to 'capital expenditure' if there are no cash flows relating to financial investment.

The cash inflows include:

- (a) receipts from the sale or disposal of property, plant or equipment; and
- (b) receipts from the repayment of the reporting entity's loans to other entities and sales of debt instruments of other entities (other than receipts forming part of an acquisition or disposal or a movement in liquid resources and classified as falling within either of those two sections of the statement).

The cash outflows include:

- (a) payments to acquire property, plant or equipment; and
- (b) loans made by the reporting entity and payments to acquire debt instruments of other entities (other than payments forming part of an acquisition or disposal or a movement in liquid resources and classified as falling within either of those two sections of the statement).

## 14.9 FRS 1: Acquisitions and disposals

It is quite normal for businesses to buy and sell other businesses or interests in other businesses. This category of cash flow records the cash-related results of these activities. Included in this section are those cash flows relating to the acquisition or disposal of any trade or business, or of an investment in an entity that is or, as a result of the transaction, becomes or ceases to be either an associate, a joint venture or a subsidiary undertaking.

## 14.10 FRS 1: Equity dividends paid

This section includes the dividends paid on the reporting entity's or, in a group, the parent's equity shares.

## 14.11 FRS 1: Management of liquid resources

The FRS defines liquid resources as 'current asset investments held as readily disposable stores of value'. A 'readily disposable investment' is one that is disposable without curtailing or disrupting the entity's business and is either readily convertible into known amounts of cash or traded in an active market. In other words, this heading is concerned with short-term investments.

Cash inflows in this section include withdrawals from short-term deposits not qualifying as cash and inflows from the disposal or redemption of any other investments held as liquid resources.

Cash outflows in this section include payments into short-term deposits not qualifying as cash and outflows to acquire any other investment held as a liquid resource.

Each entity must explain what it includes in liquid resources and declare any change in its policy.

### Activity 14.1

Imagine you are running a business and you have £500,000 that you won't need for three months. How will you invest it?

## 14.12 FRS 1: Financing

This category reports the cash flow effects of changes to share capital and long-term borrowings. Receipts and repayments of the principal amounts (i.e. the advance, not the interest) from or to external providers of finance are entered in this section. Examples include receipts from issuing and payments towards the redemption of shares and other equity instruments, debentures, loans, notes, bonds, and from long-term and short-term borrowings (other than overdrafts); the capital element of finance lease rental payment; and payments of expenses or commission on any issue of equity shares.

The amount of any financing cash flows received from or paid to an equity accounted entity should be disclosed separately.

### 14.13 FRS 1: Material transactions not resulting in any cash flows

FRS 1 also requires that details of material transactions that do not result in any cash flows should be included in a note if it is necessary for an understanding of the underlying transactions. A possible example would be an operating lease. It would involve the acquisition of an asset, but the reporting entity is paying rent, not purchasing the asset.

#### Activity 14.2

Why do you think that such items not affecting cash flows should still be reported in a note?

### 14.14 FRS 1: Exceptional and extraordinary items

Cash flows relating to items classed as exceptional or extraordinary in the profit and loss account should be shown under the appropriate standard headings, according to their nature. They should be identified in the cash flow statement or a note to it and the relationship between the cash flows and the originating exceptional or extraordinary item should be explained.

Where the cash flows themselves are exceptional because of their size or incidence but the underlying event that gave rise to them is not, sufficient disclosure should be given to explain their cause and effect.

### 14.15 An example of the FRS 1 layout using the indirect method

As you learnt in *Business Accounting 1*, FRS 1 permits cash flow statements to be prepared either under the indirect method or the direct method. The following example of a cash flow statement prepared under the indirect method from *Business Accounting 1* is included here to remind you of the format. We will then look at two examples of cash flow statements prepared under FRS 1, one using the indirect method and the other using the direct method.

Each of the nine headings of the cash flow statement can be shown as one line in the statement and the detail in a note. (The numbers are shown in Exhibit 14.3 in order to make it clear what the nine headings are. The numbers would not normally be included.)

The reconciliation to net debt does not form part of the statement, nor does the reconciliation of operating profit to net cash flow from operating activities. Either can be shown in a separate note (as the reconciliation of operating profit to net cash flow from operating activities is shown below) or adjoining the statement (as in the case of the reconciliation of the movement of cash to net debt below).

**Exhibit 14.3**

X Limited		
Cash Flow Statement for the year ended 31 December 20X7		
	£000	£000
1 <b>Net cash inflow/(outflow) from operating activities</b> (see Note 1)		XXX
2 <i>Dividends from joint ventures and associates</i>		XXX
3 <b>Returns on investments and servicing of finance</b>		
Interest received	XXX	
Interest paid	(XXX)	
Preference dividends paid	(XXX)	
<b>Net cash inflow/(outflow) from returns on investments and servicing of finance</b>		XXX
4 <b>Taxation</b>		XXX
5 <b>Capital expenditure and financial investment</b>		
Payments to acquire intangible fixed assets	(XXX)	
Payments to acquire tangible fixed assets	(XXX)	
Receipts from sales of tangible fixed assets	XXX	
<b>Net cash inflow/(outflow) from capital expenditure and financial investment</b>		(XXX)
6 <b>Acquisitions and disposals</b>		
Purchase of subsidiary undertaking	(XXX)	
Sale of business	XXX	
<b>Net cash inflow/(outflow) from acquisitions and disposals</b>		XXX
7 <b>Equity dividends paid</b>		(XXX)
8 <b>Management of liquid resources</b>		
Cash withdrawn from 7 day deposit	XXX	
Purchase of government securities	(XXX)	
Sale of corporate bonds	XXX	
<b>Net cash inflow/(outflow) from management of liquid resources</b>		XXX
9 <b>Financing</b>		
Issue of ordinary share capital	XXX	
Repurchase of debenture loan	(XXX)	
Expenses paid in connection with share issues	(XXX)	
		XXX
<b>Increase/(decrease) in cash in the period</b>		<u>XXX</u>
<b>Reconciliation of net cash flow to movement in net debt/funds</b>		
	£000	£000
<i>Increase/(decrease) in cash in the period</i>	XXX	
Cash inflow/(outflow) from increase/decrease in debt and lease financing	XXX	
Cash inflow/(outflow) from decrease/increase in liquid resources	<u>XXX</u>	
Change in net debt resulting from cash flows		XXX
Loans and finance leases acquired with subsidiary		(XXX)
New finance leases		(XXX)
Exchange rate translation differences		<u>XXX</u>
Movement in net debt in the period		XXX
Net debt at 1 January 20X7		<u>XXX</u>
Net debt at 31 December 20X7		<u>XXX</u>

**Note to the cash flow statement:****1 Reconciliation of operating profit to net cash inflow/(outflow) from operating activities**

	£000
Operating profit	XXX
Depreciation charges	XXX
(Profit)/Loss on sale of tangible fixed assets	XXX
(Increase)/Decrease in stocks	XXX
(Increase)/Decrease in debtors	XXX
Increase/(Decrease) in creditors	XXX
<b>Net cash inflow/(outflow) from operating activities</b>	<u>XXX</u>

**14.16 Two further examples**

Exhibits 14.4 and 14.5 further illustrate how a cash flow statement is prepared under FRS 1, this time using numbers to add clarity. Some key points to remember include:

- 1 It is amounts paid rather than charged or accrued that are included. Thus for both tax and dividends, it is the actual payments and receipts that occurred during the period that are included in the statement, not the amounts provided for that will be paid or received in a future period.
- 2 Profit on sale of fixed assets is already included in the sale amount and should not be included a second time.
- 3 Care should be taken to identify and eliminate non-cash adjustments to the original profit before tax figure, for example depreciation and bad debt provisions.
- 4 If the layout presented in Exhibits 14.4 and 14.5 is followed, the entries in the 'Financing' section will have the opposite signs to the others, i.e. income will be shown with negative values, rather than positive as is the case in the other sections of the statement.

**Exhibit 14.4**

From the following profit and loss and balance sheet information, prepare a cash flow statement as required by FRS 1 *using the indirect method*.

**Profit and Loss Account for the year ending 31 December 20X4**

	£000	£000
Sales		10,000
Cost of goods sold		( 6,000)
		4,000
<i>Expenses</i>		
Depreciation	600	
Interest	150	
Other expenses	<u>2,100</u>	
		(2,850)
Profit for the year before tax		1,150
Tax		( 200)
Profit for the year after tax		950
Dividends		( 150)
Retained profit		<u>800</u>





## Balance Sheet as at 31 December

	20X4		20X3	
	£000	£000	£000	£000
Fixed assets at cost		6,000		6,000
Less accumulated depreciation		<u>3,000</u>		<u>2,400</u>
Net book value		3,000		3,600
<i>Current assets</i>				
Stock	500		450	
Trade debtors	200		250	
Cash	<u>1,610</u>		<u>150</u>	
		2,310		850
<i>Less Current liabilities</i>				
Trade creditors	310		300	
Taxation	<u>200</u>		<u>150</u>	
		( 510)		( 450)
		<u>4,800</u>		<u>4,000</u>
<i>Financed by:</i>				
Ordinary share capital		2,000		2,000
Revenue reserves		<u>2,800</u>		<u>2,000</u>
		<u>4,800</u>		<u>4,000</u>

## Outline solution

## Cash Flow Statement (using the indirect method) for the year ended 31 December 20X4

	£000
<i>Net cash inflow from operating activities</i>	1,910
<i>Dividends from joint ventures and associates</i>	–
<i>Returns on investments and servicing of finance</i>	
Interest paid	( 150)
<i>Taxation</i>	( 150)
<i>Capital expenditure and financial investment</i>	–
<i>Acquisitions and disposals</i>	–
<i>Equity dividends paid</i>	( 150)
<i>Management of liquid resources</i>	–
<i>Financing</i>	–
Increase in cash in the period	<u>1,460</u>
<i>Note to the cash flow statement:</i>	
1 Reconciliation of operating profit to net cash inflow from operating activities:	
Operating profit	1,300
Depreciation charges	600
Increase in stocks	( 50)
Decrease in debtors	50
Increase in creditors	<u>10</u>
Net cash inflow from operating activities	<u>1,910</u>

## Working:

Operating profit = Retained profit (800) + Interest (150) + Dividend (150) + Tax (200) = 1,300

**Exhibit 14.5**

From the summarised cash account and the fixed asset schedule of Thistle Ltd for 20X2, prepare a cash flow statement as required by FRS 1 *using the direct method*.

**Summarised Cash Account**

	£000		£000
Opening balance	500	Wages	1,350
Cash from cash sales	3,500	Other expenses	600
Cash from credit sales	5,750	Cash paid to suppliers	4,320
Cash from issue of shares	1,200	Tax paid	100
Cash from sale of building	970	Cash paid on finance lease	700
		Final dividend for 20X1	100
		Interim dividend 20X2	50
		Closing balance	<u>4,700</u>
	<u>11,920</u>		<u>11,920</u>

**Fixed Asset Schedule**

	Plant £000	Buildings £000	Total £000
Cost at 1.1.20X2	10,000	15,000	25,000
Acquisitions	4,730	–	4,730
Disposals	–	( 5,000)	( 5,000)
Cost at 31.12.20X2	<u>14,730</u>	<u>10,000</u>	<u>24,730</u>
Accumulated depreciation at 1.1.20X2	3,500	6,000	9,500
Charge for year	650	1,500	2,150
Disposals	–	(4,500)	(4,500)
Accumulated depreciation at 31.12.20X2	<u>4,150</u>	<u>3,000</u>	<u>7,150</u>

*Other information:*

- (a) The tax charge for the year was £400,000. The opening balance on the tax liability was £100,000.
- (b) Other expenses include insurance, which is paid a year in advance, on 30 June. In 20X1, insurance of £300,000 was paid. The amount paid in 20X2 was £400,000.
- (c) Accrued wages were £75,000 at 1.1.20X2, and £95,000 at 31.12.20X2.
- (d) Stocks were £1,500,000 at 1.1.20X2, and £1,700,000 at 31.12.20X2.
- (e) All £700,000 paid on the finance lease in 20X2 represented capital. This was the first year of the lease and interest was not paid until the second payment, which was made in 20X3. Interest of £403,000 was included in the 20X3 payment and was accrued in the 20X2 financial statements.
- (f) Opening and closing trade debtors and trade creditors were:

	1.1.20X2	31.12.20X2
Trade debtors	300,000	450,000
Trade creditors	500,000	475,000

- (g) 600,000 £1 ordinary shares were issued at a premium on 1.3.20X2.

- (h) Retained profits for the year to 31.12.20X2 were £752,000.





## Outline solution

**Cash Flow Statement (using the direct method)**  
for Thistle Ltd for the year ended 31 December 20X2

	£000	£000
<i>Operating activities</i>		
Cash received from customers	9,250	
Cash paid to suppliers	(4,320)	
Cash paid to employees	(1,350)	
Other cash payments	( 600)	
<b>Net cash inflow from operating activities</b>		2,980
<i>Dividends from joint ventures and associates</i>		–
<i>Returns on investment and servicing of finance</i>		–
<i>Taxation</i>		( 100)
<i>Capital expenditure and financial investment</i>		
Sale of buildings		970
<i>Acquisitions and disposals</i>		–
<i>Equity dividend paid</i>		( 150)
<i>Management of liquid resources</i>		–
<i>Financing</i>		
Issue of share capital	1,200	
Capital element of finance lease rental payments	( 700)	
<b>Net cash inflow from financing</b>		500
<b>Increase in cash in the period</b>		<u><u>4,200</u></u>

**Note to the cash flow statement:**

1 Reconciliation of operating profit to net cash inflow from operating activities:	£000
Operating profit	1,705
Depreciation charges	2,150
Profit on sale of building	( 470)
Increase in stocks	( 200)
Increase in debtors	( 150)
Increase in prepayments	( 50)
Decrease in creditors	( 25)
Increase in accruals	20
<b>Net cash inflow from operating activities</b>	<u><u>2,980</u></u>

*Workings:*

(W1) Assume tax paid during 20X2 is the amount outstanding at the opening balance sheet date.  
The tax charge for 20X2 in the profit and loss account is £400,000.

(W2)	£
Retained profit	752,000
Add Dividends	150,000
Add Tax	400,000
Add Interest	403,000
Operating profit	<u><u>1,705,000</u></u>

**Activity**  
**14.3**

When the items needed for the additional information required by the direct method are so easy to identify from the Cash Book, why do you think most companies prefer to use the indirect method?

## 14.17 IAS 7: Cash flow statements

IAS 7 seeks similar information to that required by FRS 1, but its requirements are considerably less detailed. In place of nine cash flow category headings, IAS 7 has only three:

- 1 operating activities;
- 2 investing activities; and
- 3 financing activities.

Of the three categories, the definitions of investing activities and financing activities are generally equivalent to those used in FRS 1. The definition of operating activities is also similar to the one contained in FRS 1. However, operating activities include any activities that are neither operating nor financing in nature. More specifically, as a result of there only being three categories in IAS 7, those items that would be included under one of the other headings if FRS 1 was applied should be classified as follows:

- interest and dividends must be disclosed separately under any of the three categories, so long as the same treatment is adopted from period to period;
- cash flows from taxes on income should be disclosed separately under operating activities unless they can be attributed to specific financing or investing activities;
- cash flows from acquisition and disposal of long-term assets and other (non-cash equivalent) investments should be treated as investing activities;
- cash flows from acquisition and disposal of subsidiaries and business units should be treated as investing activities.

IAS 7 does not require the reconciliation of the movement of cash to net debt; and it defines cash flows to include cash equivalents (which appear under FRS 1 under the Management of Liquid Resources heading) such as investments with a maturity date up to three months after the balance sheet date. Thus, the change in 'cash' under FRS 1 is unlikely to be the same as the change in 'cash and cash equivalents' shown by IAS 7.

As with FRS 1, either the direct or indirect method may be used and the direct method is preferred. However, IAS 7 *does not* require preparation of the reconciliation to operating profit when the direct method is used.

One further difference between the two standards is that under IAS 7 foreign subsidiary cash flows must be translated at the exchange rates prevailing at the dates of the cash flows (or an appropriate weighted average if this is infeasible). In contrast, under FRS 1 the exchange rate used should be the one used for translating the results of the subsidiaries in the profit and loss account.

Exhibit 14.6 shows the information contained in Exhibit 14.3, this time using the IAS 7 layout prepared (as in Exhibit 14.3) using the indirect method.

**Exhibit 14.6 Format for an IAS 7 Indirect Method Cash Flow Statement**

X Limited		
Cash Flow Statement for the year ended 31 December 20X7		
	£000	£000
<b>Cash flows from operating activities</b>		
Operating profit before taxation	XXX	
Adjustments for:		
Depreciation	XXX	
(Profit)/Loss on sale of tangible fixed assets	XXX	
Operating cash flows before movements in working capital		XXX
(Increase)/Decrease in stocks	XXX	
(Increase)/Decrease in debtors	XXX	
Increase/(Decrease) in creditors	XXX	
		XXX
Cash generated by operations		XXX
Tax paid	(XXX)	
Interest paid	(XXX)	
		(XXX)
<i>Net cash from/(used in) operating activities</i>		XXX
<b>Cash flows from investing activities</b>		
Dividends from joint ventures	XXX	
Dividends from associates	XXX	
Interest received	XXX	
Payments to acquire intangible fixed assets	(XXX)	
Payments to acquire tangible fixed assets	(XXX)	
Receipts from sales of tangible fixed assets	XXX	
Purchase of subsidiary undertaking	(XXX)	
Sale of business	XXX	
		(XXX)
<i>Net cash from/(used in) investing activities</i>		(XXX)
<b>Cash flows from financing activities</b>		
Ordinary dividends paid	(XXX)	
Preference dividends paid	(XXX)	
Issue of ordinary share capital	XXX	
Repurchase of debenture loan	(XXX)	
Expenses paid in connection with share issues	(XXX)	
		XXX
<i>Net cash from/(used in) financing activities</i>		XXX
<b>Net increase/(decrease) in cash and cash equivalents</b>		XXX
<b>Cash and cash equivalents at beginning of year</b>		XXX
<b>Cash and cash equivalents at end of year</b>		XXX

**Note:** The inclusion of the reconciliation of operating profit to net cash from/(used in) operating activities at the start of the cash flow statement in Exhibit 14.6 follows the approach given in the Appendix to ISA 7. If you compare it to the reconciliation given as a note to the FRS 1-based cash flow statement in Exhibit 14.3, you will see that it contains the same items. FRS 1 states that the reconciliation is not part of the cash flow statement. It is part of the IAS 7-based cash flow statement.

The layout using the direct method is shown in Exhibit 14.7. Note that the only difference between it and the indirect method presentation is the content of the operating activities section.

**Exhibit 14.7 Format for an IAS 7 Direct Method Cash Flow Statement**

X Limited Cash Flow Statement for the year ended 31 December 20X7		
	£000	£000
<b>Cash flows from operating activities</b>		
Cash receipts from customers	XXX	
Cash paid to suppliers and employees	(XXX)	
Cash generated from operations	XXX	
Interest paid	(XXX)	
Tax paid	(XXX)	
<i>Net cash from/(used in) operating activities</i>		XXX
<b>Cash flows from investing activities</b>		
Dividends from joint ventures	XXX	
Dividends from associates	XXX	
Interest received	XXX	
Payments to acquire intangible fixed assets	(XXX)	
Payments to acquire tangible fixed assets	(XXX)	
Receipts from sales of tangible fixed assets	XXX	
Purchase of subsidiary undertaking	(XXX)	
Sale of business	XXX	
<i>Net cash from/(used in) investing activities</i>		(XXX)
<b>Cash flows from financing activities</b>		
Ordinary dividends paid	(XXX)	
Preference dividends paid	(XXX)	
Issue of ordinary share capital	XXX	
Repurchase of debenture loan	(XXX)	
Expenses paid in connection with share issues	(XXX)	
<i>Net cash from/(used in) financing activities</i>		XXX
<b>Net increase/(decrease) in cash and cash equivalents</b>		XXX
<b>Cash and cash equivalents at beginning of year</b>		XXX
<b>Cash and cash equivalents at end of year</b>		<u>XXX</u>

**Learning outcomes**

You should now have learnt:

- 1 The objective of FRS 1 is to require entities to report their cash generation and absorption for a period on a standard basis.
- 2 This aids comparison between entities.
- 3 The FRS 1-based cash flow statement must show the flows of cash for the period under the nine headings:
  - 1 operating activities
  - 2 dividends from joint ventures and associates
  - 3 returns on investments and servicing of finance
  - 4 taxation
  - 5 capital expenditure and financial investment
  - 6 acquisitions and disposals
  - 7 equity dividends paid
  - 8 management of liquid resources
  - 9 financing.



- 4 The headings in the FRS 1 cash flow statement should be in that order and the statement should include a total for each heading.
- 5 Cash flow is an increase or decrease in cash resulting from a transaction.
- 6 Operating activities are generally the cash effects of transactions and other events relating to operating and trading activities.
- 7 Under FRS 1, operating cash flows can be shown using either the *indirect* method or the *direct* method.
- 8 FRS 1 requires that reconciliations are presented between operating profit and net cash flow from operating activities for the period, and between the movement in cash in the period and the movement in net debt.
- 9 The ASB recommends that companies applying FRS 1 use the *direct* method *if the benefits of doing so outweigh the costs*.
- 10 The differences between FRS 1 and IAS 7.
- 11 How to prepare a cash flow statement under IAS 7.

## Answers to activities

- 14.1** Possible short-term investments include term deposits (e.g. 30- or 60-day deposit accounts), government stock (e.g. Treasury stock) and corporate bonds (e.g. loan stock issued by companies).
- 14.2** As the example of the operating lease given in the text indicates, it is a question of the substance of the transaction. The asset leased generated revenue through its use. Had it been purchased, the cash flow statement would have indicated that an additional asset was purchased. This information could then be used to explain changes in revenues. As it was leased not purchased, no such information is available to the user of the financial statements. By including a note about this, the user of the financial statements is able to draw similar conclusions concerning the asset to those that could be drawn if the asset had been purchased and, at the same time, is made aware that the company has adopted this approach which, in itself, has a direct impact upon cash flows.
- 14.3** In principle, the direct method is very easy to calculate. You just add up all the cash inflows and outflows relating to trading activities shown in the Cash Book. However, in practice, the volume of cash flows generated by any but the smallest business means that this can be a difficult and time-consuming task. It is not surprising that very few companies adopt this approach.

## Review questions

- 14.1** (a) List the nine headings in the cash flow statement, as required by FRS 1.  
(b) List the three headings in the cash flow statement, as required by IAS 7.
- 14.2A** Give an example of the information to be included under each of the headings in an FRS 1-based cash flow statement and indicate why this information might be useful.
- 14.3** Prepare a cash flow statement for Lee Ltd for the year ended 31 December 20X4 as required under FRS 1 using the direct method, together with note 1 to the statement. The profit and loss account, balance sheet and cash account for Lee Ltd for the year 20X4 are given below. (Do not attempt to provide the reconciliation of net cash flow to net debt.)

**Profit and Loss Account for the year ending 31 December 20X4**

	£	£
Sales		6,500
Less Cost of goods sold		(3,000)
		<u>3,500</u>
<i>Less Expenses</i>		
Wages	2,000	
Other costs	600	
Depreciation	500	
Interest	<u>100</u>	
		<u>(3,200)</u>
Profit for the year		300
Dividend		( 50)
Retained profit		<u>250</u>

**Balance Sheet as at 31 December**

	20X4		20X3	
	£	£	£	£
Fixed assets at cost		4,500		3,800
Less Accumulated depreciation		<u>2,300</u>		<u>1,800</u>
Net book value		<u>2,200</u>		<u>2,000</u>
<i>Current assets</i>				
Stock	400		500	
Trade debtors	150		200	
Cash	<u>200</u>		<u>100</u>	
		750		800
<i>Less Current liabilities</i>				
Trade creditors	325		300	
Accrued wages	<u>25</u>		<u>50</u>	
		( 350)		( 350)
		<u>2,600</u>		<u>2,450</u>
<i>Financed by:</i>				
Debentures		900		1,000
Ordinary share capital		1,000		1,000
Retained profits		<u>700</u>		<u>450</u>
		<u>2,600</u>		<u>2,450</u>

**Cash Account for 20X4**

	£		£
Opening balance	100	Wages	2,025
Cash from customers	6,550	Other expenses	600
		Cash paid to suppliers	2,875
		Interest paid	100
		Cash purchase of fixed assets	700
		Cash paid to debenture holders	100
		Dividends paid	50
		Closing balance	<u>200</u>
	<u>6,650</u>		<u>6,650</u>

**14.4** Repeat Question 14.3, this time using the direct method prepare a cash flow statement following the requirements of IAS 7.





**14.5A** The balance sheets and additional information relating to Pennylane Ltd are given below. Prepare a cash flow statement for Pennylane Ltd for the year ended 31 December 20X3 as required under FRS 1 using the indirect method, together with Note 1 to the statement. (Do not attempt to provide the reconciliation of net cash flow to net debt.)

**Pennylane Ltd**  
**Balance Sheets as at 31 December**

	20X3 £000	20X2 £000
<i>Fixed assets</i>		
Tangible assets	400	325
Intangible assets	230	180
Investments	<u>—</u>	<u>25</u>
	<u>630</u>	<u>530</u>
<i>Current assets</i>		
Stocks	120	104
Debtors	400	295
90-day deposit	50	—
Cash in hand	<u>10</u>	<u>4</u>
	<u>580</u>	<u>403</u>
<i>Creditors: amounts falling due within one year</i>		
Trade creditors	122	108
Bank overdraft	188	185
Taxation	<u>120</u>	<u>110</u>
	<u>430</u>	<u>403</u>
<i>Net current assets</i>	<u>150</u>	<u>—</u>
<i>Total assets less current liabilities</i>	780	530
<i>Creditors: amounts falling due after one year</i>		
Long-term loan	(100)	—
Provisions for liabilities and charges: deferred taxation	<u>( 80)</u>	<u>( 60)</u>
	<u>600</u>	<u>470</u>
<i>Capital and reserves</i>		
Share capital (£1 ordinary shares)	200	150
Share premium account	160	150
Revaluation reserve	100	90
Profit and loss account	<u>140</u>	<u>80</u>
	<u>600</u>	<u>470</u>

*Additional information:*

- (a) During the year interest of £75,000 was paid, and interest of £25,000 was received.  
(b) The following information relates to tangible fixed assets.

<i>At 31 December</i>	20X3 £000	20X2 £000
Cost	740	615
Accumulated depreciation	<u>(340)</u>	<u>(290)</u>
Net book value	<u>400</u>	<u>325</u>

- (c) The proceeds of the sale of fixed asset investments were £30,000.  
(d) Plant, with an original cost of £90,000 and a net book value of £50,000, was sold for £37,000.  
(e) Tax paid to the Inland Revenue during 20X3 amounted to £110,000.  
(f) Dividends of £80,000 were paid during 20X3.

**14.6A** Repeat question 14.5A, this time following the requirements of IAS 7.

**14.7** State the purposes of a cash flow statement.

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**14.8** The following information has been extracted from the books of Nimmo Limited for the year to 31 December 20X9:

**Profit and Loss Accounts for year to 31 December**

	20X8 £000	20X9 £000
Profit before taxation	9,500	20,400
Taxation	(3,200)	( 5,200)
Profit after taxation	6,300	15,200
Dividends:		
Preference (paid)	( 100)	( 100)
Ordinary: interim (paid)	(1,000)	( 2,000)
final (proposed)	(3,000)	( 6,000)
Retained profit for the year	<u>2,200</u>	<u>7,100</u>

**Balance Sheets at 31 December**

	20X8 £000	20X9 £000
<i>Fixed assets</i>		
Plant, machinery and equipment, at cost	17,600	23,900
Less Accumulated depreciation	<u>9,500</u>	<u>10,750</u>
	<u>8,100</u>	<u>13,150</u>
<i>Current assets</i>		
Stocks	5,000	15,000
Trade debtors	8,600	26,700
Prepayments	300	400
Cash at bank and in hand	<u>600</u>	<u>—</u>
	<u>14,500</u>	<u>42,100</u>
<i>Current liabilities</i>		
Bank overdraft	—	(16,200)
Trade creditors	( 6,000)	(10,000)
Accruals	( 800)	( 1,000)
Taxation	( 3,200)	( 5,200)
Dividends	( 3,000)	( 6,000)
	<u>(13,000)</u>	<u>(38,400)</u>
	<u>9,600</u>	<u>16,850</u>
<i>Share capital</i>		
Ordinary shares of £1 each	5,000	5,000
10% preference shares of £1 each	1,000	1,000
Profit and loss account	<u>3,000</u>	<u>10,100</u>
	<u>9,000</u>	<u>16,100</u>
<i>Loans</i>		
15% debenture stock	<u>600</u>	<u>750</u>
	<u>9,600</u>	<u>16,850</u>

*Additional information:*

- 1 The directors are extremely concerned about the large bank overdraft as at 31 December 20X9 and they attribute this mainly to the increase in trade debtors as a result of alleged poor credit control.







- 2 During the year to 31 December 20X9, fixed assets originally costing £5,500,000 were sold for £1,000,000. The accumulated depreciation on these assets as at 31 December 20X8 was £3,800,000.

**Required:**

Prepare a cash flow statement for the year to 31 December 20X9.

**Authors' note:** Use the FRS 1 indirect method but do not attempt to provide the reconciliation of net cash flow to net debt.

(Association of Accounting Technicians)

- 14.9** The following summarised balance sheets relate to Track Limited:

**Balance Sheets at 30 June**

	20X0 £000	20X1 £000
Fixed assets at cost	500	650
Less Accumulated depreciation	<u>200</u>	<u>300</u>
	300	350
Investments at cost	<u>200</u>	<u>50</u>
<i>Current assets</i>		
Stocks	400	700
Debtors	1,350	1,550
Cash and bank	<u>100</u>	<u>–</u>
	<u>1,850</u>	<u>2,250</u>
<i>Current liabilities</i>		
Bank overdraft	–	( 60)
Creditors	( 650)	( 790)
Taxation	( 230)	( 190)
Proposed dividend	( 150)	( 130)
	<u>(1,030)</u>	<u>(1,170)</u>
	<u>1,320</u>	<u>1,480</u>
<i>Capital and reserves</i>		
Called-up share capital (£1 ordinary shares)	500	750
Share premium account	150	200
Profit and loss account	<u>670</u>	<u>530</u>
	<u>1,320</u>	<u>1,480</u>

**Additional information:**

- 1 During the year to 30 June 20X1, some fixed assets originally costing £25,000 had been sold for £20,000 in cash. The accumulated depreciation on these fixed assets at 30 June 20X0 amounted to £10,000. Similarly, some of the investments originally costing £150,000 had been sold for cash at their book value.
- 2 The taxation balances disclosed in the above balance sheets represent the actual amounts agreed with the Inland Revenue. All taxes were paid on their due dates. Advance corporation tax may be ignored.
- 3 No interim dividend was paid during the year to 30 June 20X1.
- 4 During the year to 30 June 20X1, the company made a 1-for-2 rights issue of 250 ordinary £1 shares at 120p per share.

**Required:**

Prepare Track Ltd's cash flow statement for the year to 30 June 20X1 in accordance with the requirements of FRS 1 using the indirect method. (Do not attempt to provide the reconciliation of net cash flow to net debt.)

(Association of Accounting Technicians)

**14.10A** You are presented with the following summarised information relating to Ward plc:

**Profit and Loss Account for the year to 30 June 20X8**

	£000
Net profit for the year before taxation	900
Taxation (see Note 1)	(636)
Profit for the year after taxation	264
Extraordinary item (after tax relief of £35,000)	( 90)
Profit for the year after taxation and extraordinary item	174
Dividends paid and proposed	(119)
Retained profit for the year	<u>£55</u>

**Balance Sheet at 30 June 20X8**

	20X7 £000	20X8 £000
<i>Fixed assets (see Note 2)</i>	<u>1,515</u>	<u>1,810</u>
Investments	40	40
<i>Current assets</i>		
Stocks	175	200
Debtors	100	60
Cash at bank and in hand	20	–
	<u>295</u>	<u>260</u>
<i>Creditors: amounts falling due within one year</i>		
Bank loans and overdrafts	–	(21)
Trade creditors	(130)	(100)
Other creditors including taxation and social security (see Note 3)	(500)	(595)
	<u>(630)</u>	<u>(716)</u>
<i>Creditors: amounts falling due after more than one year</i>		
Debenture loans	(200)	( 50)
Provisions for liabilities and charges		
Taxation, including deferred taxation (see Note 4)	( 120)	( 229)
	<u>£900</u>	<u>£1,115</u>
<i>Capital and reserves</i>		
Called-up share capital	750	910
Profit and loss account	150	205
	<u>£900</u>	<u>£1,115</u>

**Notes:**

**1** The taxation charge in the profit and loss account includes the following items:

	£000
Corporation tax based on the profit for the year	542
Overprovision of last year's corporation tax	( 15)
Transfer to deferred taxation account	109
	<u>£636</u>

**2** During the year to 30 June 20X8, Ward sold an asset originally costing £150,000 for £5,000 in cash. The depreciation charged on this asset was £135,000. The total depreciation charged in the profit and loss account for the year to 30 June 20X8 was £384,000.



→ **3 Other creditors including taxation and social security includes the following items:**

	20X7 £000	20X8 £000
Corporation tax	400	465
Proposed dividend	<u>100</u>	<u>130</u>
	<u>£500</u>	<u>£595</u>

**4 The deferred taxation balances include the following items:**

	20X7 £000	20X8 £000
Opening balance	70	120
Transfer from the profit and loss account	<u>50</u>	<u>109</u>
	<u>£120</u>	<u>£220</u>

**Required:**

In so far as the information permits, prepare Ward plc's statement of cash flow for the year to 30 June 20X8 in accordance with FRS 1.

(Association of Accounting Technicians)

**14.11A** The accountant of a private company has been able to get the use of a computer to produce the spreadsheets shown below but as yet the computer lacks a program to print out final accounts. The accountant nevertheless expects to use the spreadsheet data to reconstruct a summary profit and loss account and a cash flow statement for the year to 30 April 20X6.

**Movements of Assets during the year 20X5/X6 (£000)**

	Balance sheet value last year	Depreciation or amortisation for year	Additions during year	Sales during year	Other changes	Balance sheet value this year
Goodwill	—	—	40	—	—	40
Property	760	( 36)	—	—	—	724
Plant and vehicles	540	( 84)	420	(60)	—	816
Stocks	230	—	—	—	24	254
Debtors	254	—	—	—	76	330
Bank and cash	<u>50</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>14</u>	<u>64</u>
	<u>1,834</u>	<u>(120)</u>	<u>460</u>	<u>(60)</u>	<u>114</u>	<u>2,228</u>

**Movement of Liabilities during the year 20X5/X6 (£000)**

	Balance sheet value last year	New capital issued	Payments during year	Transfers to reserves and for provisions	Other changes	Balance sheet value this year
Ordinary shares (£1 each)	1,060	440	—	—	—	1,500
Deferred taxation	36	—	—	176	—	212
General reserve	152	—	—	32	—	184
Creditors	136	—	—	—	24	160
Provision for corporation tax	340	—	(340)	52	—	52
Provision for net dividend	110	—	(110)	120	—	120
	<u>1,834</u>	<u>440</u>	<u>(450)</u>	<u>380</u>	<u>24</u>	<u>2,228</u>

**Notes:**

- (i) Proceeds of £40,000 were received from the sale of plant and vehicles.
- (ii) During the year the company redeemed 10,000 of its £1 ordinary shares for £125,000 wholly out of distributable profits and this transaction has not been included in the spreadsheets.

**Required:**

- (a) Reconstruct the profit and loss account for the year to 30 April 20X6.
- (b) Prepare a cash flow statement for the year to 30 April 20X6.

**Authors' note: Prepare the statement under the rules of FRS 1.**

*(Institute of Chartered Secretaries and Administrators)*

**14.12** You are presented with the following forecast information relating to Baker Limited for the nine months to 30 September 20X7.

Forecast profit and loss accounts (abridged) for the three quarters to 30 September 20X7:

		March 20X7 £000	June 20X7 £000	Sept 20X7 £000
Sales		250	300	350
Cost of goods sold		(200)	(240)	(280)
Gross profit		50	60	70
Depreciation		( 3)	( 20)	( 4)
Administration, selling and distribution expenses		( 37)	( 40)	( 42)
Forecast net profit		<u>£10</u>	<u>–</u>	<u>£24</u>
Forecast balances at	31 Dec 20X6 £000	31 March 20X7 £000	30 June 20X7 £000	30 Sept 20X7 £000
Debit balances				
Tangible fixed assets at cost	360	240	480	480
90 day deposit at cost	15	5	5	10
Stocks at cost	40	30	40	55
Trade debtors	50	65	75	80
Cash at bank and in hand	80	–	–	–
Credit balances				
Debentures (10%)	–	–	–	50
Trade creditors	80	120	140	150
Taxation	8	–	–	–
Proposed dividend	15	–	–	–

**Additional information:**

- 1 Sales of tangible fixed assets in March 20X7 were expected to realise £12,000 in cash.
- 2 Administration, selling and distribution expenses were expected to be settled in cash during the month in which they were incurred.
- 3 Baker Limited includes as liquid resources term deposits of less than one year.

**Required:**

- (a) calculate Baker Limited's forecast net cash position at 31 March, 30 June and 30 September 20X7 respectively; and
- (b) prepare a forecast statement of cash flow for the nine months to 30 September 20X7.

**Authors' note: Prepare the forecast statement of cash flow under the rules of FRS 1.**

*(Association of Accounting Technicians)*





**14.13A** The following information has been extracted from the draft financial information of V Ltd:

**Profit and Loss Account for the year ended 31 December 20X3**

	£000	£000
Sales		495
Raw materials consumed	(49)	
Staff costs	(37)	
Depreciation	(74)	
Loss on disposal	( 4)	
		(164)
Operating profit		331
Interest payable		( 23)
Profit before tax		308
Taxation		( 87)
		221
Dividend		( 52)
Profit retained for year		169
Balance brought forward		<u>389</u>
		<u>558</u>

**Balance Sheets**

	31 December 20X3		31 December 20X2	
	£000	£000	£000	£000
<i>Fixed assets</i> (see below)		1,145		957
<i>Current assets</i>				
Stock	19		16	
Trade debtors	38		29	
Bank	<u>31</u>		<u>37</u>	
	88		82	
<i>Current liabilities</i>				
Trade creditors	( 12)		(17)	
Taxation	( 79)		(66)	
Proposed dividend	( 21)		(15)	
	(112)		(98)	
Working capital		( 24)		( 16)
		1,121		941
<i>Long-term liabilities</i>				
Long-term loans		( 70)		(320)
		<u>1,051</u>		<u>621</u>
Share capital		182		152
Share premium		141		80
Revaluation reserve		170		
Profit and loss		<u>558</u>		<u>389</u>
		<u>1,051</u>		<u>621</u>

	<i>Land &amp; buildings £000</i>	<i>Machinery £000</i>	<i>Fixtures &amp; fittings £000</i>	<i>Total £000</i>
<i>Fixed assets</i>				
Cost or valuation:				
At 31 December 20X2	830	470	197	1,497
Additions	–	43	55	98
Disposals	–	( 18)	–	( 18)
Adjustment on revaluation	<u>70</u>	<u>–</u>	<u>–</u>	<u>70</u>
At 31 December 20X3	<u>900</u>	<u>495</u>	<u>252</u>	<u>1,647</u>
<i>Depreciation</i>				
At 31 December 20X2	( 90)	(270)	(180)	( 540)
Charge for year	( 10)	( 56)	( 8)	( 74)
Disposals	–	12	–	12
Adjustment on revaluation	<u>100</u>	<u>–</u>	<u>–</u>	<u>100</u>
At 31 December 20X3	<u>0</u>	<u>(314)</u>	<u>(188)</u>	<u>( 502)</u>
<i>Net book value</i>				
At 31 December 20X3	<u>900</u>	<u>181</u>	<u>64</u>	<u>1,145</u>
At 31 December 20X2	<u>740</u>	<u>200</u>	<u>17</u>	<u>957</u>

- (a) **You are required to** prepare a cash flow statement for V Ltd for the year ended 31 December 20X3 in accordance with the requirements of Financial Reporting Standard 1 (FRS 1).
- (b) It has been suggested that the management of long-term profitability is more important than short-term cash flow. Explain why this might be so.

(Chartered Institute of Management Accountants)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Contract accounts

## Learning objectives

After you have studied this chapter, you should be able to:

- describe the factors that are involved in accounting for contracts
- describe how accounting records of contracts are maintained
- explain the need to apply prudence when assessing profit or loss on a contract that is still in progress
- describe some of the requirements of SSAP 9 relating to long-term contracts

## Introduction

In this chapter you'll learn how to record revenues and expenditures arising on contracts in contract accounts and how to estimate profits and losses on long-term contracts so that appropriate entries may be included in the financial statements for internal use.

### 15.1 Financial statements and the business cycle

The span of production differs between businesses, and some fit into the normal pattern of annual financial statements more easily than others. A farmer's financial statements are usually admirably suited to the yearly pattern, as the goods they produce are in accordance with the seasons, and therefore repeat themselves annually. With a firm whose production span is a day or two, the annual financial statements are also quite suitable.

On the other hand, there are businesses whose work does not fit neatly with a financial year's calculation of profits. Assume that a firm of contractors has only one contract in progress, the construction of a large oil refinery complex which is expected to take five years to complete. Until it is completed, the actual profit or loss on the contract cannot be accurately stated – too many things could happen that would affect the final profit or loss over the five years of the contract. However, if the company was formed solely for the purpose of undertaking this contract, the shareholders would not want to wait for five years before the profit could be calculated and dividends paid. As a result, an attempt must be made to calculate profits earned to date at the end of each financial year. Some companies will have more than one contract under way at a time, each at a different stage, in which case the profit earned to date on each contract must be calculated.

## 15.2 Contract accounts

When a company starts a long-term contract, an account is opened for it. It is, in fact, a form of trading account. As an example, if a company has a contract to construct a new college building, it may be numbered Contract 71, in which case an account for 'Contract 71' would be opened. All expenditure traceable to the contract is charged to the account. This is far easier than ascertaining direct expenses in a factory, as any expenditure on the contract site will be treated as direct, e.g. wages for the manual workers, rental of telephone lines, hire of machinery, wages for the timekeepers, clerks, etc.

### Activity 15.1

As each contract has or will have a unique flow of revenue, it makes sound business sense to know the profit or loss it generates. Hence the use of individual contract accounts. When financial statements are produced that include long-term contracts (those that extend into future accounting periods), which fundamental accounting concept is adhered to by maintaining a separate contract account for each contract?

## 15.3 Certification of work done

When a building is being constructed, the contractor is paid on the basis of architects' certificates. In the case of an engineering contract, it is on the basis of an engineers' certificate. The architect, or engineer, will visit the site at regular intervals and will issue a certificate stating his or her estimate of the value of the work done, in terms of the total contract price (the sale price of the whole contract). So, for example, a certificate may be issued for £90,000, representing the proportion of the total contract amount which he or she has determined to have been completed.

Normally, the terms governing the contract will contain a clause concerning retention money. This is the amount, usually stated as a percentage, which will be retained, i.e. held back, in case the contract is not completed by a stated date, or against claims for faulty workmanship, etc. A 10 per cent retention in the case already mentioned would lead to £81,000 being payable by the organisation for whom the contract was being performed.

## 15.4 Allocation of overheads

Any administration overhead expenses that are not directly traceable to individual contract sites may be split between the contracts using an appropriate base, such as the overall contract amount or the labour cost to date. Of course, if there were only one contract then all the overhead expenses would quite rightly be chargeable against it. On the other hand, if there are twenty contracts, any apportionment must be arbitrary. No one can perfectly apportion the administration overhead expenses of the managing director's salary, the cost of advertising to give the firm the right 'image', or the costs of running the accounting system for the whole company, and these are only a few of such 'difficult to apportion' expenses.

Similar to the effects of apportioning overheads in departmental accounts, as covered in Chapter 38 of *Business Accounting 1*, the allocation of overheads to individual contracts may sometimes produce misleading results. It is, therefore, far better for the administrative overhead expenses which are obviously not chargeable to a contract to be omitted from the contract accounts. The surplus left on each contract account would, therefore, represent the 'contribution' of each contract to administrative overhead expenses and, thus, to profit.

Let's look at a worked example.



## 15.5 A worked example of a contract account

In many cases, contracts will start and finish in the same financial period. In such cases, there is no need to estimate profits and losses at the period end. However, when a contract extends into one or more periods after it started, it is known as a 'long-term contract' and an appropriate estimate of profits or losses must be made so that appropriate entries can be made in the financial statements. In the example which follows, Contract 44 extends into a second accounting period.

This example shows how profit or loss may be calculated for inclusion in financial statements prepared for internal purposes. As you will later learn, when financial statements are prepared for publication, a more complex approach to the calculation of profit or loss must be used.

### Exhibit 15.1

Contract 44 is for a school which is being built for the Blankshire County Council. By the end of the construction company's financial year, the following items have been charged to the contract account:

#### Contract 44

	£
Wages – labour on site	50,000
Wages – foreman and clerks on the site	32,000
Materials	40,000
Subcontractors on the site	9,000
Other site expenses	3,000
Hire of special machinery	2,000
Plant bought for the contract	20,000

The entries concerning expenditure traceable direct to the contract are relatively simple. These are charged to the contract account. These can be seen in the contract account shown on the next page.

Architects' certificates have been received during the year amounting to £147,000. It is assumed for this example that the certificates related to all work done up to the year end. A retention of 10 per cent is to be made, and the Blankshire County Council has paid £132,300. The £147,000 has been credited to a holding account called an Architects' Certificates Account and debited to the Blankshire County Council Account.

The total of the Architects' Certificates Account now needs to be transferred to the Contract 44 account. It is, after all, the 'sale' price of the work done so far, and the contract account is a type of trading account. The £132,300 received has been debited to the Cash Book and credited to Blankshire County Council Account, which now shows a balance of £14,700 representing the retention money.

The cost of the stock of the materials on the site unused is not included in the value of the architects' certificates and is, therefore, carried forward to the next year at cost price. The value of the plant at the end of the year is also carried forward. In this case the value of the cost of the plant not yet used is £14,000. This means that £20,000 has been debited for the plant and £14,000 credited thus, effectively, charging £6,000 for depreciation. Assume that the stock of unused materials cost £8,000.

The Contract 44 account will now appear as follows:

#### Contract 44

	£		£
Wages – labour on site	50,000	Architects' certificates	147,000
Wages – foreman and clerks on the site	32,000	Stock of unused materials c/d	8,000
Materials	40,000	Value of plant c/d	14,000
Subcontractors on the site	8,000		
Other site expenses	3,000		
Hire of special machinery	2,000		
Plant bought for the contract	20,000		

Activity  
15.2

What is the profit to date on Contract 44?

## 15.6 Profit estimation

In order to estimate the profit or loss on Contract 44, more information is needed beyond the values shown in the contract account. The contract is only part-completed, and costly snags may crop up which would dissipate any potential profit earned, or problems may have developed already, such as subsidence which has remained unnoticed as yet. It is not possible to identify all known factors of this type. To minimise the risk of profits being overstated or losses understated, the concept of prudence is applied and the profit is reduced according to an 'appropriate' modifier.

Before SSAP 9 was revised in 1988, the custom had developed of multiplying the profit shown on the contract account by two-thirds and then multiplying the result by the proportion of work certified for which cash had been received. **While the current, and far more complex SSAP 9 approach must be adopted in practice when preparing financial statements for publication, the previous, simpler approach is an excellent example of the prudence concept and is still used in examinations. You will, therefore, need to learn how to apply it.**

It is relatively straightforward to apply, as shown in the following example:

$$\text{Apparent profit} \times \frac{2}{3} \times \frac{\text{Cash received}}{\text{Work certified}} = \text{Amount available for dividends, etc.}$$

For example: the apparent profit earned to date on Contract 44 is £14,000 (*see* Activity 15.2)

$$£14,000 \times \frac{2}{3} \times \frac{132,300}{147,000} = £8,400.$$

On the basis of the £8,400 profit calculated above, the Contract 44 Account can now be completed.

Contract 44			
	£		£
Wages – labour on site	50,000	Architects' certificates	147,000
Wages – foreman and clerks on the site	32,000	Stock of unused materials c/d	8,000
Materials	40,000	Value of plant c/d	14,000
Subcontractors on the site	8,000		
Other site expenses	3,000		
Hire of special machinery	2,000		
Plant bought for the contract	20,000		
Profit to the profit and loss account	8,400		
Reserve (the part of the apparent profit not yet recognised as earned) c/d	5,600		
	<u>169,000</u>		<u>169,000</u>
Stock of unused materials b/d	8,000	Reserve b/d	5,600
Value of plant b/d	14,000		

## Profit and Loss Account

	£
Profits from contracts:	
Contract 43	–
Contract 44	8,400
Contract 45	–

## 15.7 Anticipated losses

In the case shown, there has been an apparent profit earned to date of £14,000. If instead of revealing such a profit, the contract account had shown a loss, two-thirds of the loss would *not* be taken into account. Instead, *all* the loss would be recognised *now*. Thus, if the loss were £9,000, that would be the amount transferred to the profit and loss account. This is in accordance with the concept of prudence which states that profits may be underestimated but never losses.

As is the case with stock valuation, it is not always the case that an engineer or architect will certify the work done on the last day of the financial year. He or she may call several days before or after the year end. The cost of any work done but not certified at the year end is carried down at cost as a balance to the next period when certification will take place.

So far, we have considered how the various figures to be included in the financial statements prepared for internal use may be calculated. When financial statements are prepared for external use, i.e. for publication, the more complex SSAP 9 or IAS 11/IAS 18 approach must be adopted.

You may not need to know the current accounting standard rules relating to long-term contracts. It depends upon which examinations you are studying for. If you do, Section 15.8 provides an introduction to the rules contained in SSAP 9 but you will need to consult the relevant UK or International accounting standard or a more advanced textbook on the subject before tackling your examinations.

## 15.8 Long-term contracts and SSAP 9

When SSAP 9: *Stocks and long-term contracts* was revised in 1988, this custom-based *rule of thumb* was replaced with a far more complex calculation that focuses upon turnover and the work certified valued in relation to the overall contract amount.

According to SSAP 9, long-term contracts should be assessed on a contract by contract basis. They should be reflected in the profit and loss account by recording turnover and related costs as contract activity progresses. Turnover should be ascertained in a manner appropriate to the stage of completion of the contract, the business and the industry in which it operates. Where the outcome of a contract can be assessed with reasonable accuracy, profit should be recognised (so far as prudence permits) as the difference between recognised turnover and related costs. Any foreseeable losses identified should be immediately recognised.

The amount of long-term contracts, at costs incurred, net of amounts transferred to cost of sales, after deducting foreseeable losses and payments on account not matched with turnover should be classified as 'long-term contract balances' and disclosed separately within the balance sheet heading of 'stocks'. The balance sheet note should disclose separately the balances of 'net cost less foreseeable losses' and 'applicable payments on account'.

### Profit recognition

SSAP 9 provides two definitions relevant to any consideration of long-term contracts: those of 'attributable profit' and 'foreseeable losses'.

*Attributable profit* is that part of total profit currently estimated to arise over the duration of the contract, after allowing for estimated remedial and maintenance costs and increases in costs (so far as not recoverable under the terms of the contract), that fairly reflects the profit attributable to that part of the work performed at the accounting date. There can be no attributable profit until the outcome of the contract can be assessed with reasonable certainty.

*Foreseeable losses* are those losses estimated to arise over the duration of the contract, after allowing for estimated remedial and maintenance costs and increases in costs (so far as not recoverable under the terms of the contract), *whether or not* work has commenced, and irrespective of both the proportion of work completed and profits expected on other contracts.

SSAP 9 does not prescribe a point at which profit on long-term contracts should start to be recognised. The requirement that a contract's outcome must be capable of being assessed with reasonable certainty before any profit should be recognised, leaves it entirely to individual judgement. One company may recognise profit after the first six months, while another may wait until a year has passed. As a result, interfirm comparability is impaired. However, the standard does assist in intra-firm comparison from one year to the next as it requires consistent application of the method of ascertaining attributable profit both within the business, and from year to year.

Clearly, future costs must be estimated in arriving at a figure for attributable profit or foreseeable losses. Unfortunately, no two people are likely to independently arrive at exactly the same amount. Thus, the profits and losses recognised are likely to vary considerably from one company to another and interfirm comparability is further impaired.

### Turnover valuation

Turnover should be ascertained in a manner suitable to the industry and the specific contracts concerned. It is suggested that valuation of work carried out may be used to derive a value for turnover; and that profit should be regarded as earned in relation to the *amount* of work performed to date. These two approaches could often produce different results, but the profit taken up needs to reflect the proportion of the work carried out and to take into account any known inequalities of profitability in the various stages of a contract. Consequently, when there is a work certified value, this should be used as the turnover value and the costs incurred in achieving that turnover charged to cost of sales.

Where no work certified figure exists, costs to date as a proportion of total expected costs should be applied to the contract value in order to determine the figure for turnover. Where the work certified value is not available for all work completed, a combination of the two approaches would be appropriate. One further point regarding turnover concerns settlements of claims against the purchaser arising from circumstances not foreseen in the contract: these should only be incorporated when there is sufficient evidence that payment will be received.

### Complexity

The standard is extremely complex and it is beyond the scope of this book, where this topic is being introduced rather than developed in detail, to extend coverage to the level of complexity that would be required in order to cover the SSAP 9 rules adequately. As previously mentioned, if you require a sound understanding of the current SSAP 9 rules concerning long-term contracts you should refer to the standard, where the appendix covers the topic in detail, or to a specialised text on the subject.

From the perspective of the review questions that follow at the end of this chapter, apart from question 15.5A, *unless otherwise indicated in the question*, you should apply the two-thirds rule of thumb given above. Doing so will develop an awareness of the complexity of contract accounts without the added complexity of applying the SSAP 9 rules. By adopting this approach, you will be well placed to progress to an understanding of the SSAP 9 rules, knowing well the underlying factors involved in contract accounts. The answer to question 15.5A is based on

the SSAP 9 rules, and is provided for the benefit of anyone who chooses to study those rules independently of this book.

## 15.9 Long-term contracts and IASs 11 and 18

Two international accounting standards are relevant to long-term contracts – IAS 11 (*Construction contracts*) and IAS 18 (*Revenue*). There is no significant difference between them and the principles contained in SSAP 9.

### Learning outcomes

You should now have learnt:

- 1 That a separate contract account should be opened in respect of every contract.
- 2 That profits or losses on each uncompleted contract must be estimated at the end of each accounting period.
- 3 That losses should be written off immediately they are identified.
- 4 That an appropriate amount of any profit should be included in the financial statements.
- 5 Some of the definitions and requirements of SSAP 9 relating to long-term contracts.
- 6 That the rule of thumb profit/loss ascertainment approach adopted in this chapter is necessarily simplified in order to ensure the topic is well understood; SSAP 9 should be consulted for the definitive approach to adopt when preparing financial statements.

### Answers to activities

- 15.1** While it is ongoing, each contract represents an asset or liability. The separate determination concept – see Section 10.6 in *Business Accounting 1* – requires that the amount of each individual asset or liability be determined separately from all other assets and liabilities. Maintaining a separate contract account for each contract enables compliance with this fundamental accounting concept.
- 15.2** The difference between the two sides (Credit side £169,000; Debit side £155,000) is £14,000. At this stage, as the contract is incomplete, the £14,000 simply reflects the excess of potential revenue over expenditure to date on the contract. It does not necessarily mean that the contract will ultimately result in a profit and it certainly does not mean that there is a profit to date on the contract of £14,000 – the stock of materials, for example, would need to be sold for precisely the amount shown and the plant disposed of at the amount it is valued at, neither of which is particularly likely.

## Review questions

**15.1** The financial statements of Arms Ltd are made up to 31 March in each year. Work on a certain contract started on 1 July 20X6 and completed on 31 January 20X8. The total contract price was £360,000, but a penalty of £5,000 was suffered for failure to complete by 31 December 20X7.

The following is a summary of receipts and payments relating to the contract:

	Year to 31 March	
	20X7	20X8
Payments		
Materials	51,000	67,000
Wages	57,000	91,000
Direct expenses	4,000	6,000
Purchases of plant on 1 July 20X6	24,000	–
Receipts		
Contract price (less penalty)	108,000	255,000
Sale, on 31 January 20X8, of all plant purchased on 1 July 20X6	–	6,000

The amount received from the customer in 20X7 represented the contract price of all work certified in that financial year less 10 per cent retention money.

When the financial statements to 31 March 20X7 were prepared, it was estimated that the contract would be completed on 31 December 20X7, and that the market value of the plant would be £6,000 on that date. It was estimated that further expenditure on the contract would be £161,000.

For the purposes of the financial statements, depreciation of plant is calculated, in the case of uncompleted contracts, by reference to the expected market value of the plant on the date when the contract is expected to be completed, and is allocated between accounting periods by the straight line method.

Credit is taken, in the financial statements, for such a part of the estimated total profit, on each uncompleted contract, as corresponds to the proportion between the contract price of the work certified and the total contract price.

### Required:

Prepare a summary of the account for this contract, showing the amounts transferred to the profit and loss account at 31 March 20X7 and 31 March 20X8.

**15.2** Stannard and Sykes Ltd are contractors for the construction of a pier for the Seafront Development Corporation. The value of the contract is £300,000, and payment is by engineer's certificate subject to a retention of 10 per cent of the amount certified; this is to be held by the Seafront Development Corporation for six months after the completion of the contract.

The following information is extracted from the records of Stannard and Sykes Ltd.

	£
Wages on site	41,260
Materials delivered to site by supplier	58,966
Materials delivered to site from store	10,180
Hire of plant	21,030
Expenses charged to contract	3,065
Overheads charged to contract	8,330
Materials on site at 30 November 20X8	11,660
Work certified	150,000
Payment received	135,000
Work in progress at cost (not the subject of a certificate to date)	12,613
Wages accrued to 30 November 20X8	2,826



**Required:**

Prepare the Pier Contract Account to 30 November 20X8, and suggest a method by which profit could be prudently estimated.

(Association of Chartered Certified Accountants)

**15.3A** Cantilever Ltd was awarded a contract to build an office block in London and work commenced at the site on 1 May 20X5.

During the period to 28 February 20X6, the expenditure on the contract was as follows:

	£
Materials issued from stores	9,411
Materials purchased	28,070
Direct expenses	6,149
Wages	18,493
Charge made by the company for administration expenses	2,146
Plant and machinery purchased on 1 May 20X5, for use at site	12,180

On 28 February 20X6, the stock of materials at the site amounted to £2,164 and there were amounts outstanding for wages £366 and direct expenses £49.

Cantilever Ltd has received on account the sum of £64,170 which represents the amount of Certificate No. 1 issued by the architects in respect of work completed to 28 February 20X6, after deducting 10 per cent retention money.

The following relevant information is also available:

- (a) the plant and machinery has an effective life of five years, with no residual value, and
- (b) the company only takes credit for two-thirds of the profit on work certified.

**Required:**

- (a) prepare a contract account for the period to 28 February 20X6, and
- (b) show your calculation of the profit to be taken to the credit of the company's profit and loss account in respect of the work covered by Certificate No 1.

(Institute of Chartered Accountants)

**15.4A** You are required to prepare the contract account for the year ended 31 December 20X0, and show the calculation of the sum to be credited to the profit and loss account for that year.

On 1 April 20X0 MN Ltd commenced work on a contract which was to be completed by 30 June 20X1 at an agreed price of £520,000.

MN Ltd's financial year ended on 31 December 20X0, and on that day expenditure on the contract totalled £263,000 made up as under:

	£
Plant	30,000
Materials	124,000
Wages	95,000
Sundry expenses	5,000
Head office charges	9,000
	<u>263,000</u>

Cash totalling £195,000 had been received by 31 December 20X0 representing 75 per cent of the work certified as completed on that date, but in addition, work costing £30,000 had been completed but not certified.

A sum of £9,000 had been obtained on the sale of materials which had cost £8,000 but which had been found unsuitable. On 31 December 20X0 stocks of unused materials on site had cost £10,000 and the plant was valued at £20,000.

To complete the contract by 30 June 20X1 it was estimated that:

(a) the following additional expenditures would be incurred:

	£
Wages	64,000
Materials	74,400
Sundry expenses	9,000

(b) further plant costing £25,000 would be required;

(c) the residual value of all plant used on the contract at 30 June 20X1 would be £15,000;

(d) head office charges to the contract would be at the same annual rate plus 10 per cent.

It was estimated that the contract would be completed on time but that a contingency provision of £15,000 should be made. From this estimate and the expenditure already incurred, it was decided to estimate the total profit that would be made on the contract and to take to the credit of the profit and loss account for the year ended 31 December 20X0, that proportion of the total profit relating to the work actually certified to that date.

(Chartered Institute of Management Accountants)

Note: The next question requires the application of the rules contained in SSAP 9.

### 15.5A General information on the Lytax group of companies:

Lytax Ltd is a company in the building construction industry.

It has three regional offices, North Borders, Midlands and South Downs, which are constituted as separate units for accounting purposes.

On 25 May 20X0 Lytax Ltd acquired 90 per cent of the ordinary share capital of Ceprem Ltd, a company which manufactures building materials.

Lytax Ltd has for 3 years held 15 per cent of the ordinary share capital of Bleco plc. This company carries out specialist research and development activities into building and construction materials, technology and techniques. It then sells the results of these activities to other companies.

#### Details of long-term contract work undertaken by Lytax Ltd:

At 31 October 20X0, Lytax Ltd was engaged in various contracts including five long-term contracts, details of which are given below:

	1	2	3	4	5
	£000	£000	£000	£000	£000
Contract price	1,100	950	1,400	1,300	1,200
At 31 October 20X0:					
Cumulative costs incurred	664	535	810	640	1,070
Estimated further costs to completion	106	75	680	800	165
Estimated cost of post-completion guarantee/rectification work	30	10	45	20	5
Cumulative costs incurred transferred to cost of sales	580	470	646	525	900
Progress payments					
Cumulative receipts	615	680	615	385	722
Invoiced:					
Awaiting receipt	60	40	25	200	34
Retained by contractee	75	80	60	65	84

It is not expected that any contractees will default on their payments.

Up to 31 October 20X9, the following amounts had been included in the turnover and cost of sales figures.

	1	2	3	4	5
	£000	£000	£000	£000	£000
Cumulative turnover	560	340	517	400	610
Cumulative costs incurred transferred to cost of sales	460	245	517	400	610
Foreseeable loss transferred to cost of sales	–	–	–	70	–





It is the accounting policy of Lytax Ltd to arrive at contract turnover by adjusting contract cost of sales (including foreseeable losses) by the amount of contract profit or loss to be regarded as recognised, separately for each contract.

**Required:**

- (a) Calculate the amounts to be included within the turnover and cost of sales figures of the profit and loss account of Lytax Ltd for the year ended 31 October 20X0, in respect of the long-term contracts.
- (b) Prepare extracts from the balance sheet of Lytax Ltd at 31 October 20X0 incorporating the financial effects of the long-term contracts.

**Your answer should comply with the requirements of SSAP 9 (Stocks and Long-Term Contracts) and should include any supporting notes required by that standard.**

Workings for individual contracts which build up to the total for each item must be shown.

All calculations should be made to the nearest £1,000.

*(Association of Chartered Certified Accountants)*

**You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)**

# GROUPS



## Introduction

This part is concerned with group financial statements: how they are prepared, how various transactions should be dealt with, and how their presentation is regulated by the Companies Acts and accounting standards.

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# Group financial statements: an introduction

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the difference between a parent undertaking and a subsidiary undertaking
- explain why it is important to produce consolidated financial statements
- describe some of the alternative methods whereby control can be acquired by one company over another
- explain the relevance of 'dominant influence' to the identification of a parent–subsidiary relationship
- explain the relevance of 'significant influence' to the identification of the existence of an 'associated undertaking'

## Introduction

In this chapter, you'll learn about the three principal rights of shareholders; and about groups (of companies), of how they come about, and of the resulting need for consolidated financial statements.

### 16.1 Shareholders and their rights

As you know, the owners of a company are its shareholders, usually just the holders of ordinary shares but, when they exist, also holders of preference shares.

The rights of these two categories of shareholders are not identical. Anyone who buys ordinary shares in a company is usually given three rights:

- 1 The right to vote at shareholders' meetings.
- 2 A right to an interest in the net assets of the company.
- 3 A right to an interest in (i.e. share of) the profits earned by the company.

Preference shareholders do not normally have voting rights, except under special circumstances, such as when their dividends are in arrears, or their special rights are being changed by the company. Debenture holders have no rights at all to vote at general meetings and are not 'owners' of the company.

By using their voting rights at shareholders' meetings, the shareholders are able to show their approval, or disapproval, of the election of directors and any proposals the directors make at

such meetings. It is the directors who manage the affairs of the company. As a result, any group of shareholders, who between them own more than 50 per cent of the voting shares of a company, can control the election of directors and, consequently, control the policies of the company through the directors. This would also be true if any one shareholder owned more than 50 per cent of the voting shares.

One company may hold shares in another company. Therefore if one company wishes to obtain control of another company it can do so by obtaining more than 50 per cent of the voting shares in that company.

### Activity 16.1

Why do you think preference shareholders do not have the same voting rights as ordinary shareholders?

Let's look at what happens when one company acquires sufficient share capital of another company to achieve control over it.

## 16.2 Parent undertakings and subsidiary undertakings

We will consider this topic by working through an example.

- S Ltd has an issued share capital of 100,000 ordinary shares of £1 each.
- On 1 January 20X6, P Ltd buys 50,001 of these shares from Jones, a shareholder, for £60,000.
- P Ltd will now have control of S Ltd because it has more than 50 per cent of the voting shares.
- P Ltd is now called the 'parent undertaking'.
- S Ltd is now called the 'subsidiary undertaking' of P Ltd.

Just because the identity of S Ltd's shareholders has changed it does not mean that the balance sheet of S Ltd will be drafted in a different fashion. Looking only at the balance sheet of S Ltd no one would be able to deduce that P Ltd owned more than 50 per cent of the shares, or even that P Ltd owned any shares at all in S Ltd. After obtaining control of S Ltd both P Ltd and S Ltd will continue to maintain their own sets of accounting records and to draft their own balance sheets.

If the balance sheets of P Ltd and S Ltd are looked at, both before and after the purchase of the shares, any differences can be noted.

### Exhibit 16.1

(a) Before P Ltd acquired control of S Ltd:

P Ltd Balance Sheet as at 31 December 20X5			S Ltd Balance Sheet as at 31 December 20X5		
	£	£		£	£
Fixed assets		200,000	Fixed assets		40,000
<i>Current assets</i>			<i>Current assets</i>		
Stock-in-trade	29,000		Stock-in-trade	40,000	
Debtors	8,000		Debtors	20,000	
Bank	<u>63,000</u>		Bank	<u>10,000</u>	
		<u>100,000</u>			<u>70,000</u>
		<u>300,000</u>			<u>110,000</u>
Share capital		250,000	Share capital		100,000
Profit and loss		<u>50,000</u>	Profit and loss		<u>10,000</u>
		<u>300,000</u>			<u>110,000</u>

(b) After P Ltd acquired control of S Ltd the balance sheets would appear as follows before any further trading took place:

P Ltd Balance Sheet as at 1 January 20X6		S Ltd Balance Sheet as at 1 January 20X6	
	£		£
Fixed assets	200,000	Fixed assets	40,000
Investment in subsidiary undertaking	60,000	Current assets	
Current assets		Stock-in-trade	40,000
Stock-in-trade	29,000	Debtors	20,000
Debtors	8,000	Bank	10,000
Bank	3,000		70,000
	<u>40,000</u>		<u>110,000</u>
	<u>300,000</u>		
Share capital	250,000	Share capital	100,000
Profit and loss	50,000	Profit and loss	10,000
	<u>300,000</u>		<u>110,000</u>

The only differences can be seen to be those in the balance sheets of P Ltd. The bank balance has been reduced by £60,000, this being the cost of shares in S Ltd, and the cost of the shares now appears as 'Investment in subsidiary undertaking £60,000'. The balance sheets of S Ltd are completely unchanged.

We shall see later that FRS 2: *Accounting for subsidiary undertakings* gives a much wider meaning to 'subsidiary undertaking' than we have seen so far. This has been deliberately excluded up to this point to let you see the basic structure without complicating it.

### 16.3 Profit and loss accounts within a group

From the profit and loss account point of view, the appropriation section of S Ltd would also be completely unchanged after P Ltd takes control. However, P Ltd would see a change in its profit and loss account when a dividend is received from S Ltd – in this case, the dividends received would be shown as investment income in the profit and loss account. **Remember that dividends paid are charged to the appropriation section of the paying company's profit and loss account, while dividends received are in the main part of the receiving company's profit and loss account.**

The terms '**parent undertaking**' and '**subsidiary undertaking**' have been in use for only a few years. Previously, a parent undertaking was called a '**holding company**', and a subsidiary undertaking was called a '**subsidiary company**'. In Chapter 26, we will see why the terms were changed. One of the reasons was that consolidated financial statements used to be concerned only with companies. Now, subsidiary undertakings can include unincorporated businesses as well.

In order to demonstrate the principles involved in company consolidations, the next nine chapters (17 to 25) focus solely upon that form of consolidation. In addition, we will often simply call a parent undertaking 'parent' and a subsidiary undertaking may be shortened to 'subsidiary'.

Chapter 26 examines accounting standards which cover the accounting needed for parent and subsidiary undertakings. The chapters which follow fully comply with all accounting standard requirements.

## 16.4 The need for consolidated financial statements

Imagine being a shareholder of P Ltd from Section 16.2. Each year you would receive a set of P Ltd's financial statements. After P's acquisition of the shares in S Ltd, £60,000 would appear as an asset in the balance sheet of P Ltd. It would be normal for it to be shown at cost (i.e. £60,000) thus observing the historical cost concept.

When you look at the profit and loss account of P Ltd you would see the dividends received from S Ltd. This, and the cost of the investment in the balance sheet would be the only things you would know about the subsidiary.

However, you have invested in P Ltd, and because of its majority shareholding in S Ltd you have, in effect, also invested in S Ltd. Being consistent, if you want to know how the assets and liabilities in P Ltd change over the years, you will now also like to know exactly the same for S Ltd.

You are not, however, a shareholder of S Ltd, and would not be sent a copy of its financial statements. As a result, you would not have any right to any further information about S Ltd.

This would be even worse if P Ltd, for example, had twenty subsidiaries and held a different percentage stake in each of them. It would also be almost certain that the companies would trade with each other, and owe money to one another or be owed money by them. This would also raise complications and make it hard for you to see what was truly happening across the group.

This would, clearly, be less than ideal. There is a remedy for this sort of problem. The Companies Acts seek to overcome this type of situation by requiring that parent undertakings distribute to their shareholders a set of consolidated financial statements. This is known as **consolidated accounting**. These bring together all of the financial statements for the parent undertaking and its subsidiaries in such a way that the shareholders can get an overall view of their investments.

You will learn more about consolidated financial statements in Section 16.7.

## 16.5 Different methods of acquiring control of one company by another

The acquisition of control in S Ltd by P Ltd involved P Ltd buying more than 50 per cent of the shares in S Ltd from Jones. This is by no means the only way of acquiring control. Other methods of doing so include:

- 1 S Ltd may issue new shares to P Ltd amounting to over 50 per cent of the voting shares. P Ltd pays for the shares in cash.
- 2 P Ltd could purchase over 50 per cent of the voting shares of S Ltd on the open market by exchanging for them newly issued shares of P Ltd.

Or, acting through another company:

- 3 P Ltd acquires more than 50 per cent of the voting shares in S1 Ltd for cash, and then S1 Ltd proceeds to acquire all of the voting shares of S2 Ltd. S2 Ltd would then be a sub-subsidary of P Ltd.

These are only some of the more common ways by which one company becomes a subsidiary of another company.

## 16.6 Control by dominant influence

The issue of FRS 2 in 1992 introduced a further way of looking at whether or not one company has control of another. It states that if one company has 'the right to exercise a dominant

influence' over another undertaking, then the company with the dominating influence is deemed to have control of the other. **It is not necessary to have over 50 per cent of the voting share capital of a company in order to be able to exercise a dominant influence.** A dominant influence means that the holder of it has a right to give directions with regard to the operating and financial policies of another undertaking, and that the directors of that latter undertaking are obliged to follow those directions, whether or not the directors consider that those directions are for the benefit of the undertaking.

In other words, if one undertaking can tell another undertaking what to do, both from an operating and a financial point of view, and the directors of that latter undertaking have to carry out such instructions, then such an undertaking will be a subsidiary undertaking. This is a much wider definition than merely looking at the amounts of the shareholdings.

### Activity 16.2

How can an entity have a dominant influence when it does not own over 50 per cent of the voting share capital?

## 16.7 The nature of a group

Wherever two or more companies are in the relationship of parent and subsidiary undertakings, a 'group' is said to exist. As you're already learnt in Section 16.4, in order to comply with legal requirements when such a group exists, besides the financial statements of the parent undertaking itself there must be a set of financial statements prepared in respect of the group as a whole. These group financial statements are usually known as **consolidated financial statements**, because the financial statements of all the companies have had to be consolidated together to form one set of financial statements.

Sometimes parent undertakings carry on trading as well as investing in their subsidiaries. There are, however, many parent undertakings that do not trade at all, the whole of their activities being concerned with investing in other companies.

## 16.8 Subsidiary undertakings which are not limited companies

At one time, group financial statements consolidated only financial statements of limited companies. In effect, subsidiaries had to be limited companies to 'merit' inclusion in the consolidated financial statements. In 1992, FRS 2 widened this so that a subsidiary undertaking does not need to be a limited company. Share of ownership or the dominant influence approach will determine whether or not an entity is a subsidiary undertaking. If so, its financial statements are included in the preparation of the consolidated financial statements, in a similar fashion to those of limited companies.

Other forms of entity – associate undertakings and joint ventures – are, by definition, *not* subsidiaries and are not consolidated. They are included in the financial statements according to the rules contained in FRS 9.

**See Chapter 26 for further details of these rules.**

Thus, the main changes to accounting for subsidiary undertakings introduced by FRS 2 were as follows:

- 1 The concept of 'dominant influence' widened the scope of which companies could be seen as subsidiary undertakings, rather than relying on share ownership.
- 2 Unincorporated businesses (i.e. not companies) were brought into its scope and came to be classed as subsidiary undertakings which have to have their financial statements consolidated with the rest of the group.



## 16.9 Teaching method

This topic can be taught and learnt using either of two methods. One is to focus on the journal entries required; this is quite abstract and, many feel, more difficult to understand than the other method. Accordingly, the method used in this book for teaching consolidated financial statements is that of showing the adjustments needed on the face of the consolidated balance sheet, together with any workings required to explain the amounts included. This approach is adopted because:

- 1 We believe our job is to try to help you to understand the subject, and not just to be able to perform the necessary calculations. We believe that, given a clear explanation of what is happening, the necessary accounting entries are much easier to understand. Showing the adjustments on the face of the balance sheet gives a 'bird's-eye view' so that it is easier to see what is happening, rather than having to laboriously trace your way through a complex set of double-entry adjustments made in ledger accounts.
- 2 This would be a much lengthier and more costly book if all of the double entry accounts were shown. It is better for a first look at consolidated financial statements to be an introduction to the subject only, rather than both an introduction and a very detailed analysis of the subject. If you can understand the consolidated financial statements shown in this book, you will have a firm foundation which will enable you, in your future studies, to tackle the more difficult and complicated aspects of the subject.

### Learning outcomes

You should now have learnt:

- 1 Ordinary shareholders generally have voting rights, a right in the net assets of the company, and a right to an interest in profits earned.
- 2 Preference shareholders do not usually have any voting rights.
- 3 Ordinary shareholders receive copies of the financial statements for the company whose shares they hold, but not for any company whose shares are owned by the company they hold their shares in.
- 4 Consolidated financial statements provide shareholders in parent undertakings with financial statements incorporating the relevant data for all companies in the group – not just the parent company's own accounts data.
- 5 The status of 'subsidiary undertaking' is dependent upon the existence of control over that undertaking by another entity.
- 6 'Control' is determined by whether 'dominant influence' can be exerted, not simply by the level of investment in the company.

### Answers to activities

- 16.1** Preference shareholders have far less risk in their investment than ordinary shareholders. In exchange for the greater risk they experience, the ordinary shareholders get voting rights that permit them to influence the decision making of the company.

- 16.2** It could have a dominant influence by virtue of some agreement made with the company. For example, a bank may have dominant influence over the major decisions of a company in exchange for a loan it has granted to the company. Dominant influence is generally able to exist because of agreements between shareholders that result in one of the shareholders being granted the dominant influence.

## Review questions

- 16.1** What determines whether or not one company is a subsidiary undertaking of another company?
- 16.2** How are incorporated businesses affected by the provisions of FRS 2?
- 16.3** What benefits accrue to the investor in a parent undertaking by the use of consolidated financial statements?
- 16.4** How did FRS 2 change the way in which consolidated financial statements should be drawn up?

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Consolidation of balance sheets: basic mechanics (I)

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the principle of cancellation that is adopted when preparing consolidated financial statements
- explain why goodwill may arise on consolidation
- calculate goodwill and include it in the consolidated balance sheet
- explain what is meant by the term 'minority interest'
- explain how the existence of reserves at the time of acquisition affects the preparation of consolidated financial statements

## Introduction

In this chapter, you'll learn how to consolidate financial statements where a subsidiary is wholly owned or partially owned, how to calculate and include positive goodwill in the consolidated balance sheet, and how to consolidate subsidiaries with reserves. Finally, you'll learn how to include negative goodwill in the consolidated financial statements.

### 17.1 Background

This chapter is concerned with the basic mechanics of consolidating balance sheets. The figures used will be quite small, as there is no virtue in obscuring the principles involved by using more realistic amounts. For the sake of brevity, some abbreviations will be used. As the consolidation of the financial statements of either two or three companies, but no more, will be attempted, then the abbreviations will be: P for the parent undertaking, S1 the first subsidiary undertaking, and S2 the second subsidiary undertaking. Where there is only one subsidiary undertaking it will be shown as S. Unless stated to the contrary, all the shares will be ordinary shares of £1 each.

It will make the problems of the reader far easier if relatively simple balance sheets can be used to demonstrate the principles of consolidated financial statements. To this end, the balance sheets which follow in the next few chapters will usually have only two sorts of assets, those of stock and cash at bank. This will save a great deal of time and effort. If every time a consolidated balance sheet were to be drawn up the reader had to deal with assets of land, buildings, patents, motor vehicles, plant and machinery, stock, debtors and bank balances, then they would not be using their time productively.

## 17.2 The principle of cancellation

The various financial statements of the parent undertaking and its subsidiary undertakings have to be brought together and consolidated into one set of financial statements for the whole of the group. Some items in one of the original sets of financial statements will also be found to refer to exactly the same transactions in one of the other sets of original final accounts.

Let us look at some of the more common examples:

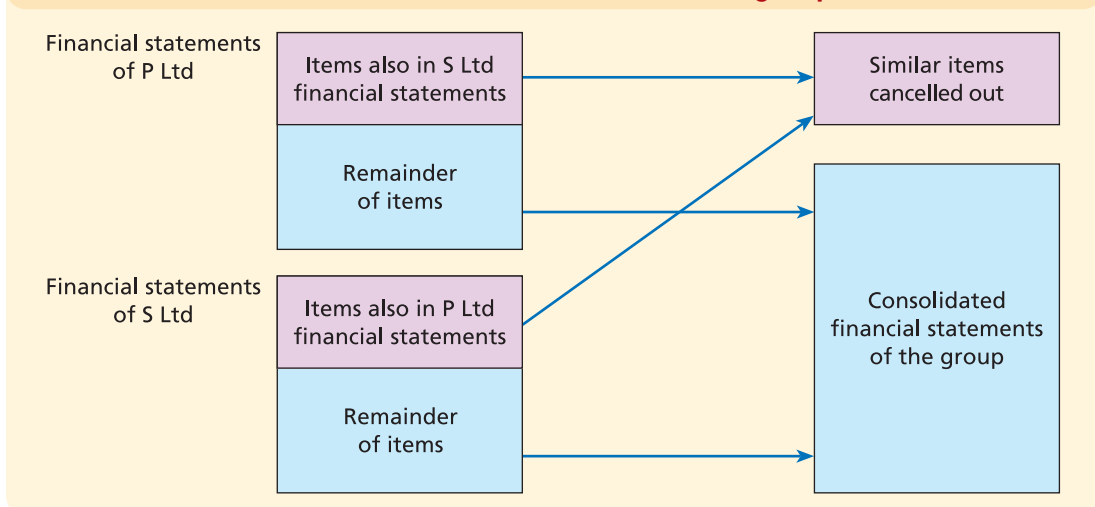
- 1 An item which is a debtor in one balance sheet may be shown as a creditor in another balance sheet. If P Ltd had sold goods to S Ltd, its subsidiary, but S Ltd had not yet paid for them, then the item would be shown as a debtor in the balance sheet of P Ltd and as a creditor in the balance sheet of S Ltd.
- 2 Sales by one of the group to another company in the group will appear as sales in one company's accounts and purchases in another company's financial statements.
- 3 Shares bought in one of the subsidiary undertakings by the parent undertaking will be shown as an investment on the assets side of the parent undertaking's balance sheet. In the balance sheet of the subsidiary, exactly those same shares will be shown as issued share capital.
- 4 Dividends paid by a subsidiary undertaking to its parent undertaking will be shown as paid dividends in the financial statements of the subsidiary, and as dividends received in the financial statements of the parent undertaking.

The group or consolidated financial statements are supposed to show how the group as a whole has dealt with the world outside. Transactions which are simply within the group do not represent dealings with the outside world. When all of the separate accounts of the companies within the group are put together such items need to be deleted, and will not appear in the consolidated financial statements of the group.

This therefore is the principle of cancellation. Similar things in different financial statements within the group should be cancelled out from each to arrive at the group's financial statements. All of the items already listed will therefore not appear in the consolidated financial statements.

This can be shown in the form of the diagram in Exhibit 17.1.

**Exhibit 17.1 Consolidation of financial statements of a group**





This means that a consolidated balance sheet, where the subsidiaries are 100 per cent owned by the parent undertaking, will appear as follows:

Consolidated Balance Sheet as at . . .		
	£	£
<i>Fixed assets (less Cancelled items)</i>		xxxx
<i>Current assets (less Cancelled items)</i>	xxxx	
<i>Less Current liabilities (less Cancelled items)</i>	(xxxx)	
		<u>xxxx</u>
		<u>xxxx</u>
<i>Financed by:</i>		
Share capital (of the parent undertaking only, as the purchase of shares in the subsidiaries have cancelled out)		xxxx
Reserves (less Cancelled items)		<u>xxxx</u>
		<u>xxxx</u>

## 17.3 Rule 1

In consolidation, the first rule, therefore, is that like things cancel out each other. In fact, **cancellation accounts** are what consolidation financial statements are all about. It also helps the reader to see the issue more clearly if the consolidated balance sheet is constructed immediately after P has bought the shares in S. In fact, this may not be done in practice, but it is useful to use the method from a teaching point of view.

### Exhibit 17.2

**100 per cent of the shares of S bought at balance sheet value.**

P has just bought all the shares of S. Before consolidation the balance sheets of P and S appear as follows:

P Balance Sheet		
		£
Investment in subsidiary S	(A)	6
Bank		<u>4</u>
		<u>10</u>
Share capital		<u>10</u>
		<u>10</u>
S Balance Sheet		
		£
Stock		5
Bank		<u>1</u>
		<u>6</u>
Share capital	(B)	<u>6</u>
		<u>6</u>

Now the consolidated balance sheet can be drawn up. The rule about like things cancelling out each other can now be applied. As can be seen, item (A) in P's balance sheet and item (B) in S's balance sheet are concerned with exactly the same thing, namely the 6 ordinary shares of S, and for the same amount, for the shares are shown in both balance sheets at £6. These are cancelled out when the consolidated balance sheet is drafted.

#### P & S Consolidated Balance Sheet

	£
Stock	5
Bank (£4 + £1)	<u>5</u>
	<u>10</u>
Share capital	<u>10</u>
	<u>10</u>

However, sometimes the amount paid by the parent undertaking is not the same as the subsidiary's figure for share capital.

### Exhibit 17.3

*100 per cent of the shares of S bought for more than balance sheet value.*

#### P Balance Sheet

		£
Investment in subsidiary S: 6 shares	(C)	9
Bank		<u>1</u>
		<u>10</u>
Share capital		<u>10</u>
		<u>10</u>

#### S Balance Sheet

		£
Stock		5
Bank		<u>1</u>
		<u>6</u>
Share capital	(D)	<u>6</u>
		<u>6</u>

Now (C) and (D) refer to like things, but the amounts are unequal. What has happened is that P has given £3 more than the book value for the shares of S. In accounting, where the amount paid (or 'consideration') for something exceeds the stated value, the difference is known as *goodwill*; and, when the consideration is less than the stated value, the difference is known as *negative goodwill*. (In practice, the accounting standards require that 'fair values', rather than book values are used – see Section 22.3; however, for the sake of clarity, unless otherwise indicated, the book values will be used throughout this book.) The consolidated balance sheet is therefore:

#### P and S Consolidated Balance Sheet

	£
Goodwill (C) £9 – (D) £6	3
Stock	5
Bank (£1 + £1)	<u>2</u>
	<u>10</u>
Share capital	<u>10</u>
	<u>10</u>

Let's look at an example where negative goodwill has been created.

**Exhibit 17.4**

*100 per cent of the shares of S bought for less than balance sheet value.*

**P Balance Sheet**

		£
Investment in subsidiary S: 6 shares	(E)	4
Stock		5
Bank		<u>1</u>
		<u>10</u>
Share capital		<u>10</u>
		<u>10</u>

**S Balance Sheet**

		£
Stock		5
Bank		<u>1</u>
		<u>6</u>
Share capital	(F)	<u>6</u>
		<u>6</u>

P has bought all the shares of S, but has given only £4 for £6 worth of shares at balance sheet values. The £2 difference is negative goodwill. The uninitiated might look upon the £2 as being 'profit' but your knowledge of company financial statements should tell you that this difference could never be distributed as cash dividends. This negative goodwill is treated as a minus entry in the Goodwill section of the balance sheet under FRS 10: *Goodwill and intangible assets*.

Under FRS 10, the consolidated balance sheet appears as:

**P and S Consolidated Balance Sheet**

		£
Goodwill: negative goodwill (E) £4 – (F) £6	( 2)	
Stock (£5 + £5)		10
Bank (£1 + £1)		<u>2</u>
		<u>10</u>
Share capital		<u>10</u>
		<u>10</u>

**17.4 Cost of control**

The expression **cost of control** could be used instead of 'goodwill'. This expression probably captures the essence of the purchase of the shares rather than calling it goodwill. It is precisely for the sake of gaining control of the assets of the company that the shares are bought. However, the expression 'goodwill' is more widely used and is correspondingly the one that will be used through the remainder of this book.

See Section 23.4 for details of how to record entries in a 'cost of control' account.

You can now attempt Review Questions 17.1, 17.2 and 17.3.

## 17.5 Rule 2

Rule 2 states that, although the whole of the shares of the subsidiary have not been bought, nonetheless the whole of the assets of the subsidiary (subject to certain intercompany transactions described later) will be shown in the consolidated balance sheet.

This rule comes about because of the choice made originally between two possible methods that could have been chosen. Suppose that P bought 75 per cent of the shares of S then the balance sheets could be displayed in one of two ways:

### P and S Consolidated Balance Sheet – Method 1

	£
Goodwill	XXXX
Assets of P: 100 per cent	XXXX
Assets of S: 75 per cent	XXXX
	<u>XXXX</u>
Share capital of P	XXXX
	<u>XXXX</u>

### P and S Consolidated Balance Sheet – Method 2

	£
Goodwill	XXXX
Assets of P: 100 per cent	XXXX
Assets of S: 100 per cent	XXXX
	<u>XXXX</u>
Share capital of P	XXXX
Minority interest (i.e. claims of outsiders which equal 25 per cent of the assets of S)	XXXX
	<u>XXXX</u>

It can be seen that both balance sheets show the amount of assets which P owns by virtue of its proportionate shareholding. On the other hand the second balance sheet gives a fuller picture, as it shows that P has control of all of the assets of S, although in fact it does not own all of them. The claims of outsiders come to 25 per cent of S and obviously they cannot control the assets of S, whereas P, with 75 per cent, can control the whole of the assets even though they are not fully owned by it. The second balance sheet method gives rather more meaningful information and is the method that is used for consolidated financial statements in accordance with FRS 2.

Assume that S has 6 shares of £1 each and that it has one asset, namely stock £6. P buys 4 shares for £1 each, £4. If the whole of the assets of S £6 are to be shown on the assets side of the consolidated balance sheet, and the cancellation of only £4 is to take place on the other side, then the consolidated balance sheet would not balance. Exhibit 17.5 shows this in detail before any attempt is made to get the consolidated balance sheet to balance.



**Exhibit 17.5****P Balance Sheet**

	£
Investment in subsidiary: 4 shares (bought today)	4
Stock	5
Bank	<u>1</u>
	<u>10</u>
Share capital	<u>10</u>
	<u>10</u>

**S Balance Sheet**

	£
Stock	<u>6</u>
Share capital	<u>6</u>

As the two extra shares have not been bought by P, they cannot be brought into any calculation of goodwill or negative goodwill. P has in fact bought four shares with a balance sheet value of £1 each, £4, for precisely £4. There is therefore no element of goodwill or negative goodwill. On the other hand, the consolidated balance sheet per Rule 2 must show the whole of the assets of S. This gives a consolidated balance sheet as follows:

**P and S Consolidated Balance Sheet**

	£
Stock (£5 + £6)	11
Bank	<u>1</u>
	<u>12</u>
Share capital	<u>10</u>
	<u>12</u>

Quite obviously, if you now inserted the totals, they would differ by £2. What is this £2? On reflection it can be seen to be the £2 shares not bought by P. These shares belong to outsiders, they are not owned by the group. These outsiders also hold less than 50 per cent of the voting shares of S. In fact, if they owned more, then S would probably not be a subsidiary company. The title given to the outside shareholders is the apt one therefore of **minority interest**. As the whole of the assets of S are shown in the consolidated balance sheet then part of these assets are owned by the minority interest. This claim against the assets is therefore shown on the capital side of the consolidated balance sheet. The consolidated balance sheet becomes:

**P and S Consolidated Balance Sheet**

	£
Stock (£5 + £6)	11
Bank	<u>1</u>
	<u>12</u>
Share capital	10
<b>Minority interest</b>	<u>2</u>
	<u>12</u>

This therefore is the convention of showing the whole of the assets of the subsidiary (less certain intercompany transactions) in the consolidated balance sheet, with the claim of the minority interest shown on the other side of the balance sheet.

**Exhibit 17.6**

*Where less than 100 per cent of the subsidiary's shares are bought at more than book value.*

**P Balance Sheet**

		£
Investment in subsidiary: 6 shares	(G)	8
Stock		11
Bank		<u>1</u>
		<u>20</u>
Share capital		<u>20</u>
		<u>20</u>

**S Balance Sheet**

		£
Stock		7
Bank		<u>3</u>
		<u>10</u>
Share capital	(I)	<u>10</u>
		<u>10</u>

P has bought 6 shares only, but has paid £8 for them. As the book value of the shares is £6, the £2 excess must therefore be goodwill. The cancellation is therefore £6 from (G) and £6 from (I), leaving £2 of (G) to be shown as goodwill in the consolidated balance sheet. The remaining £4 of (I) is in respect of shares held by the minority interest.

**P and S Consolidated Balance Sheet**

		£
Goodwill		2
Stock (£11 + £7)		18
Bank (£1 + £3)		<u>4</u>
		<u>24</u>
Share capital		20
Minority interest		<u>4</u>
		<u>24</u>

**Exhibit 17.7**

*Where less than 100 per cent of the shares in the subsidiary are bought at less than book value.*

**P Balance Sheet**

		£
Investment in subsidiary: 7 shares	(J)	5
Stock		13
Bank		<u>2</u>
		<u>20</u>
Share capital		<u>20</u>
		<u>20</u>





### S Balance Sheet

	£
Stock	9
Bank	<u>1</u>
	<u>10</u>
Share capital	(K) <u>10</u>
	<u>10</u>

Seven shares of S have now been bought for £5. This means that £5 of (J) and £5 of (K) cancel out with £2 shown as negative goodwill. The remaining £3 of (K) is in respect of the shares held by the minority interest and will be shown as such in the consolidated balance sheet.

### P and S Consolidated Balance Sheet

	£
Goodwill: negative goodwill	( 2)
Stock (£13 + £9)	22
Bank (£2 + £1)	<u>3</u>
	<u>23</u>
Shares	20
Minority interest	<u>3</u>
	<u>23</u>

You can now attempt Review Questions 17.6 and 17.7.

## 17.6 Taking over subsidiaries with reserves

So far, for reasons of simplification, the examples given have been of subsidiaries having share capital but no reserves. When reserves exist, as they do in the vast majority of firms, it must be remembered that they belong to the ordinary shareholders. This means that if P buys all the 10 shares of S for £15, and S at that point of time has a credit balance of £3 on its profit and loss account and a general reserve of £2, then what P acquires for its £15 is the full entitlement/rights of the 10 shares measured by/shown as:

	£
10 Shares	10
Profit and loss	3
General reserve	<u>2</u>
	<u>15</u>

This means that the £15 paid and the £15 entitlements as shown will cancel out each other and will not be shown in the consolidated balance sheet. This is shown by the balance sheets shown in Exhibit 17.8.

**Exhibit 17.8**

*Where 100 per cent of the shares are bought at book value when the subsidiary has reserves.*

**P Balance Sheet**

		£
Investment in subsidiary: 10 shares	(L)	15
Stock		11
Bank		<u>2</u>
		<u>28</u>
Share capital		20
Profit and loss		5
General reserve		<u>3</u>
		<u>28</u>

**S Balance Sheet**

		£
Stock		9
Bank		<u>6</u>
		<u>15</u>
Share capital	(M1)	10
Profit and loss	(M2)	3
General reserve	(M3)	<u>2</u>
		<u>15</u>

**P and S Consolidated Balance Sheet**

	£
Stock (£11 + £9)	20
Bank (£2 + £6)	<u>8</u>
	<u>28</u>
Share capital	20
Profit and loss	5
General reserve	<u>3</u>
	<u>28</u>

The cost of the shares (L) £15 is cancelled out exactly against (M1) £10 + (M2) £3 + (M3) £2 = £15. These are therefore the only items cancelled out and the remainder of the two balance sheets of P and S are then combined to be the consolidated balance sheet.

**Exhibit 17.9**

*Where 100 per cent of the shares are bought at more than book value when the subsidiary has reserves.*

**P Balance Sheet**

		£
Investment in subsidiary: 10 shares	(N)	23
Stock		7
Bank		<u>5</u>
		<u>35</u>
Share capital		20
Profit and loss		9
General reserve		<u>6</u>
		<u>35</u>





### S Balance Sheet

		£
Stock		15
Bank		<u>2</u>
		<u>17</u>
Share capital	(O1)	10
Profit and loss	(O2)	4
General reserve	(O3)	<u>3</u>
		<u>17</u>

P paid £23 (N) for the entitlements (O1) £10 + (O2) £4 + (O3) £3 = £17, so that a figure of £6 will be shown in the consolidated balance sheet for goodwill.

### P and S Consolidated Balance Sheet

		£
Goodwill		6
Stock (£7 + £15)		22
Bank (£5 + £2)		<u>7</u>
		<u>35</u>
Share capital		20
Profit and loss		9
General reserve		<u>6</u>
		<u>35</u>

### Exhibit 17.10

*Where 100 per cent of the shares in the subsidiary are bought at below book value when the subsidiary has reserves.*

### P Balance Sheet

		£
Investment in subsidiary: 10 shares	(Z)	17
Stock		10
Bank		<u>8</u>
		<u>35</u>
Share capital		20
Profit and loss		6
General reserve		<u>9</u>
		<u>35</u>

### S Balance Sheet

		£
Stock		16
Bank		<u>5</u>
		<u>21</u>
Share capital	(Q1)	10
Profit and loss	(Q2)	8
General reserve	(Q3)	<u>3</u>
		<u>21</u>

P has paid £17 (Z) for the benefits of (Q1) £10 + (Q2) £8 + (Q3) £3 = £21. This means that there will be negative goodwill of £21 – £17 = £4 in the consolidated balance sheet, while (Z), (Q1), (Q2) and (Q3), having been cancelled out, will not appear.

#### P and S Consolidated Balance Sheet

	£
Goodwill: negative goodwill	( 4)
Stock (£10 + £16)	26
Bank (£8 + £5)	13
	<u>35</u>
Share capital	20
Profit and loss	6
General reserve	9
	<u>35</u>

### Exhibit 17.11

*Where less than 100 per cent of the shares are bought in a subsidiary which has reserves, and the shares are bought at the balance sheet value.*

#### P Balance Sheet

	£
Investment in subsidiary: 8 shares (R)	24
Stock	15
Bank	6
	<u>45</u>
Share capital	20
Profit and loss	17
General reserve	8
	<u>45</u>

#### S Balance Sheet

	£
Stock	21
Bank	9
	<u>30</u>
Share capital (T1)	10
Profit and loss (T2)	5
General reserve (T3)	15
	<u>30</u>

The items (R) and the parts of (T1), (T2) and (T3) which are like things need to be cancelled out. The cancellation takes place from the share capital and reserves of S as follows:

	Total at acquisition date	Bought by P 80 per cent	Held by minority interest
	£	£	£
Share capital	10	8	2
Profit and loss	5	4	1
General reserve	15	12	3
	<u>30</u>	<u>24</u>	<u>6</u>





The amount paid by P was £24, and as P acquired a total of £24 value of shares and reserves the cancellation takes place without there being any figure of positive or negative goodwill. The consolidated balance sheet therefore appears:

#### P and S Consolidated Balance Sheet

	£
Stock (£15 + £21)	36
Bank (£6 + £9)	15
	<u>51</u>
Share capital	20
Profit and loss	17
General reserve	8
Minority interest	6
	<u>51</u>

#### Activity 17.1

What are the two rules of consolidation?

## 17.7 Partial control at a price not equal to balance sheet value

In Exhibit 17.11, the amount paid for the 80 per cent of the shares of S was equal to the balance sheet value of the shares in that it amounted to £24. This is unusual. As the price is normally different from balance sheet value. If an amount paid is greater than the balance sheet value then the excess will be shown as goodwill in the consolidated balance sheet; while if a smaller amount than balance sheet value is paid then the difference is negative goodwill and will be shown as such in the consolidated balance sheet. Using the balance sheet figure of S in Exhibit 17.11, if P had paid £30 for 80 per cent of the shares of S then the consolidated balance sheet would show a goodwill figure of £6. If, instead, only £21 had been paid then the consolidated balance sheet would show £3 negative goodwill.

**When the acquisition of two subsidiaries brings out in the calculations a figure of goodwill in respect of the acquisition of one subsidiary, and a figure for negative goodwill in respect of the acquisition of the other subsidiary, the two figures should be shown separately in the consolidated balance sheet, followed by the net figure.** For instance if P had acquired two subsidiaries S1 and S2 where the calculations showed a figure of £10 for goodwill on the acquisition of S1 and a figure of £4 negative goodwill on the acquisition of S2, then the consolidated balance sheet would show a figure for goodwill of £10 and a figure for negative goodwill of £4.

The final exhibit in this chapter is a composite one, bringing in most of the points already shown.

**Exhibit 17.12**

*Where two subsidiaries have been acquired, both with reserves, full control being acquired of one subsidiary and a partial control of the other subsidiary.*

**P Balance Sheet**

	£
Investment in subsidiaries:	
S1 10 shares (U)	37
S2 7 shares (V)	39
Stock	22
Bank	2
	<u>100</u>
Share capital	40
Profit and loss	50
General reserve	10
	<u>100</u>

**S1 Balance Sheet**

	£
Stock	19
Bank	11
	<u>30</u>
Share capital (W1)	10
Profit and loss (W2)	12
General reserve (W3)	8
	<u>30</u>

**S2 Balance Sheet**

	£
Stock	42
Bank	18
	<u>60</u>
Share capital (X1)	10
Profit and loss (X2)	30
General reserve (X3)	20
	<u>60</u>

With the acquisition of S1 P has paid £37 for (W1) £10 + (W2) £12 + (W3) £8 = £30, giving a figure of £7 for goodwill. With the acquisition of S2 P has given £39 for  $\frac{7}{10}$  of the following: (X1) £10 + (X2) £30 + (X3) £20 = £60  $\times \frac{7}{10}$  = £42, giving a figure of £3 for negative goodwill. The two figures should be shown separately in the consolidated balance sheet.

**P and S1 and S2 Consolidated Balance Sheet**

	£
Goodwill	7
Negative goodwill	( 3 )
	<u>4</u>
Stock (£22 + £19 + £42)	83
Bank (£2 + £11 + £18)	31
	<u>118</u>
Share capital	40
Profit and loss	50
General reserve	10
Minority interest:	
$\frac{3}{10}$ of (X1)	3
$\frac{3}{10}$ of (X2)	9
$\frac{3}{10}$ of (X3)	6
	<u>18</u>
	<u>118</u>



Now work through Review Questions 17.10 and 17.11.

## Learning outcomes

You should now have learnt:

- 1 Some items in the financial statements of one of the group companies will refer to exactly the same transactions as in the financial statements of one of the other group companies and they will need to be cancelled out when the consolidated financial statements are prepared (*Rule 1*).
- 2 Where the consideration exceeds the balance sheet value acquired, goodwill arises.
- 3 Where the consideration is less than the balance sheet value acquired, the negative goodwill is treated as a negative entry in the Goodwill section of the balance sheet under FRS 10.
- 4 The treatment of goodwill is governed by FRS 10. (See Chapter 10.)
- 5 Minority interests exist when less than 100 per cent of the share capital of a subsidiary is owned at the balance sheet date.
- 6 All the assets of a subsidiary are included in the consolidated financial statements, even where less than 100 per cent of the share capital has been acquired (*Rule 2*).
- 7 When a subsidiary has reserves at the date of acquisition, those reserves are treated as part of the capital acquired and the calculation of goodwill includes the relevant proportion of the reserves.
- 8 When goodwill arises in respect of consolidation of one subsidiary and negative goodwill arises on another, the two amounts should be shown separately in the consolidated financial statements.

## Answer to activity

- 17.1** Rule 1: items in the financial statements of one of the group companies that refer to exactly the same transactions as in the financial statements of one of the other group companies (e.g. a debtor balance in one company's ledger that corresponds to an equal creditor balance in another group company's ledger) need to be cancelled out when the consolidated financial statements are prepared.

Rule 2: all the assets of a subsidiary are included in the consolidated financial statements, even where less than 100 per cent of the share capital has been acquired.

## Review questions

**Note:** In each of these review questions, the amounts have been kept low, so as to enable you to demonstrate an understanding of, and ability to apply, the principles involved.

**17.1** The following balance sheets were drawn up immediately after Pop Ltd had acquired control of Son Ltd. You are to draw up a consolidated balance sheet.

### Pop Balance Sheet

	£
Investment in Son Ltd: 1,600 Ordinary £1 shares	2,400
Stock	1,000
Bank	<u>600</u>
	<u>4,000</u>
Share capital – £1 Ordinary shares	<u>4,000</u>
	<u>4,000</u>

### Son Balance Sheet

	£
Stock	1,200
Bank	<u>400</u>
	<u>1,600</u>
Share capital – £1 Ordinary shares	<u>1,600</u>
	<u>1,600</u>

**17.2** Prepare a consolidated balance sheet from the following balance sheets of Pa Ltd and Sonny Ltd which were drawn up immediately after Pa Ltd had acquired the share capital of Sonny Ltd.

### Pa Balance Sheet

	£
Investment in Sonny Ltd: 25,000 £1 Ordinary shares	20,000
Fixed assets	30,000
Stock	8,000
Debtors	4,000
Bank	<u>3,000</u>
	<u>65,000</u>
Share capital – £1 Ordinary shares	<u>65,000</u>
	<u>65,000</u>

### Sonny Balance Sheet

	£
Fixed assets	18,000
Stock	4,000
Debtors	2,000
Bank	<u>1,000</u>
	<u>25,000</u>
Share capital – £1 Ordinary shares	<u>25,000</u>
	<u>25,000</u>



**17.3** Draw up a consolidated balance sheet from the following balance sheets which were drawn up as soon as Papai Ltd had acquired control of Sonny Jim Ltd.

#### Papai Balance Sheet

	£
Investment in Sonny Jim Ltd: 100,000 Ordinary £1 shares	100,000
Fixed assets	74,000
Stock	45,000
Debtors	26,000
Bank	5,000
	<u>250,000</u>
Share capital – Ordinary £1 shares	<u>250,000</u>
	<u>250,000</u>

#### Sonny Jim Balance Sheet

	£
Fixed assets	69,000
Stock	24,000
Debtors	4,000
Bank	3,000
	<u>100,000</u>
Share capital – Ordinary £1 shares	<u>100,000</u>
	<u>100,000</u>

**17.4A** Papi Ltd acquired all the shares in Son and Sister Ltd and then the following balance sheets were drawn up. You are to prepare a consolidated balance sheet.

#### Papi Balance Sheet

	£
Investment in Son and Sister Ltd – Ordinary £1 shares	70,000
Fixed assets	120,000
Stock	32,000
Debtors	26,000
Bank	2,000
	<u>250,000</u>
Share capital – Ordinary £1 shares	<u>250,000</u>
	<u>250,000</u>

#### Son and Sister Balance Sheet

	£
Fixed assets	38,000
Stock	9,000
Debtors	2,000
Bank	1,000
	<u>50,000</u>
Share capital – Ordinary £1 shares	<u>50,000</u>
	<u>50,000</u>

**17.5A** Draw up a consolidated balance sheet from the balance sheets of Parental Ltd and Sibling Ltd that were drafted immediately after the shares in S Ltd were acquired by P Ltd.

#### Parental Balance Sheet

	£
Investment in Sibling Ltd: 180,000 Ordinary £1 shares	120,000
Fixed assets	60,000
Stock	14,000
Debtors	37,000
Bank	4,000
	<u>235,000</u>
Share capital – Ordinary shares of 50p each	<u>235,000</u>
	<u>235,000</u>

#### Sibling Balance Sheet

	£
Fixed assets	110,000
Stock	28,000
Debtors	41,000
Bank	1,000
	<u>180,000</u>
Share capital – Ordinary £1 shares	<u>180,000</u>
	<u>180,000</u>

**17.6** Parent Ltd acquires 60 per cent of the shares in Siblings Together Ltd. Balance sheets are then drafted immediately. You are to draw up the consolidated balance sheet.

#### Parent Balance Sheet

	£
Investment in Siblings Together Ltd: 12,000 Ordinary £1 shares	25,000
Fixed assets	80,000
Stock	18,000
Debtors	24,000
Bank	3,000
	<u>150,000</u>
Share capital – Ordinary shares of 25p each	<u>150,000</u>
	<u>150,000</u>

#### Siblings Together Balance Sheet

	£
Fixed assets	14,000
Stock	3,000
Debtors	1,000
Bank	2,000
	<u>20,000</u>
Share capital – Ordinary £1 shares	<u>20,000</u>
	<u>20,000</u>





**17.7** Parents United Ltd acquires 95 per cent of the shares of Son and Friends Ltd. The following balance sheets are then drafted. You are to draw up the consolidated balance sheet.

#### Parents United Balance Sheet

	£
Investment in Son and Friends Ltd: 12,160 Ordinary £1 shares	13,200
Fixed assets	39,000
Stock	15,600
Debtors	10,200
Bank	<u>2,000</u>
	<u>80,000</u>
Share capital – Ordinary £1 shares	<u>80,000</u>
	<u>80,000</u>

#### Son and Friends Balance Sheet

	£
Fixed assets	9,600
Stock	4,300
Debtors	1,700
Bank	<u>400</u>
	<u>16,000</u>
Share capital – Ordinary £1 shares	<u>16,000</u>
	<u>16,000</u>

**17.8A** Papa and Mamae Ltd buys  $66\frac{2}{3}$  per cent of the shares in Son and Daughter Ltd. You are to draw up the consolidated balance sheet from the following balance sheets constructed immediately control had been achieved.

#### Papa and Mamae Balance Sheet

	£
Investment in Son and Daughter: 12,000 Ordinary £1 shares	10,800
Fixed assets	58,000
Stock	10,200
Debtors	15,900
Bank	<u>5,100</u>
	<u>100,000</u>
Share capital – Ordinary £1 shares	<u>100,000</u>
	<u>100,000</u>

#### Son and Daughter Balance Sheet

	£
Fixed assets	8,000
Stock	5,000
Debtors	4,000
Bank	<u>1,000</u>
	<u>18,000</u>
Share capital – Ordinary £1 shares	<u>18,000</u>
	<u>18,000</u>

**17.9A** After Pop and Mum Ltd acquired 75 per cent of the shares of Sons and Cousins Ltd the following balance sheets are drawn up. You are to draw up the consolidated balance sheet.

**Pop and Mum Balance Sheet**

	£
Investments in Sons and Cousins Ltd: 15,000 Ordinary £1 shares	18,000
Fixed assets	45,000
Stock	8,000
Debtors	13,000
Bank	<u>6,000</u>
	<u>90,000</u>
Share capital – Ordinary shares of 10p each	<u>90,000</u>
	<u>90,000</u>

**S Balance Sheet**

	£
Fixed assets	12,000
Stock	3,000
Debtors	4,000
Bank	<u>1,000</u>
	<u>20,000</u>
Share capital – Ordinary £1 shares	<u>20,000</u>
	<u>20,000</u>

**17.10** Immediately after Pai and Family Ltd had acquired control of Son One Ltd and Son Two Ltd the following balance sheets were drawn up. You are to draw up a consolidated balance sheet.

**Pai and Family Balance Sheet**

	£
Investments in subsidiaries:	
Son One Ltd (10,000 Ordinary £1 shares)	16,000
Son Two Ltd (12,000 Ordinary £1 shares)	18,000
Fixed assets	73,000
Current assets	<u>33,000</u>
	<u>140,000</u>
Share capital – Ordinary £1 shares	110,000
Profit and loss account	<u>30,000</u>
	<u>140,000</u>

**Son One Balance Sheet**

	£
Fixed assets	11,000
Current assets	<u>4,000</u>
	<u>15,000</u>
Share capital – Ordinary £1 shares	10,000
Profit and loss account	2,000
General reserve	<u>3,000</u>
	<u>15,000</u>





### Son Two Balance Sheet

	£
Fixed assets	19,000
Current assets	<u>6,000</u>
	<u>25,000</u>
Share capital – Ordinary £1 shares	15,000
Profit and loss account	6,000
General reserve	<u>4,000</u>
	<u>25,000</u>

**17.11** Immediately after Parent Acquisition's Ltd had acquired control of Sibling One Ltd and Sibling Two Ltd the following balance sheets were drawn up. You are to draw up a consolidated balance sheet.

### Parent Acquisition's Balance Sheet

	£
Investment in subsidiaries:	
Sibling One Ltd (30,000 Ordinary £1 shares)	68,000
Sibling Two Ltd (20,000 Ordinary £1 shares)	27,500
Fixed assets	164,400
Current assets	<u>40,100</u>
	<u>300,000</u>
Share capital – Ordinary £1 shares	200,000
Profit and loss account	80,000
General reserve	<u>20,000</u>
	<u>300,000</u>

### Sibling One Balance Sheet

	£
Fixed assets	70,000
Current assets	<u>30,000</u>
	<u>100,000</u>
Share capital – Ordinary £1 shares	50,000
Profit and loss account	30,000
General reserve	<u>20,000</u>
	<u>100,000</u>

### Sibling Two Balance Sheet

	£
Fixed assets	24,000
Current assets	<u>8,000</u>
	<u>32,000</u>
Share capital – Ordinary £1 shares	20,000
Profit and loss account	5,000
General reserve	<u>7,000</u>
	<u>32,000</u>

**17.12A** Immediately after Pa, Ma and Co Ltd had achieved control of Sub 1 Ltd and Sub 2 Ltd the following balance sheets are drawn up. You are to draw up the consolidated balance sheet.

**Pa, Ma and Co Balance Sheet**

	£
Investments in subsidiaries:	
Sub 1 Ltd 16,000 £1 Ordinary shares	30,000
Sub 2 Ltd 24,000 £1 Ordinary shares	38,000
Fixed assets	81,000
Current assets	<u>27,000</u>
	<u>176,000</u>
Share capital – Ordinary £1 shares	100,000
Profit and loss account	56,000
General reserve	<u>20,000</u>
	<u>176,000</u>

**Sub 1 Balance Sheet**

	£
Fixed assets	37,000
Current assets	<u>11,000</u>
	<u>48,000</u>
Share capital – Ordinary £1 shares	16,000
Profit and loss account	18,000
General reserve	<u>14,000</u>
	<u>48,000</u>

**Sub 2 Balance Sheet**

	£
Fixed assets	29,000
Current assets	<u>13,000</u>
	<u>42,000</u>
Share capital – Ordinary £1 shares	28,000
Profit and loss account	9,000
General reserve	<u>5,000</u>
	<u>42,000</u>

**17.13A** The following balance sheets of Parents Forever Ltd, Sonny 1 Ltd and Sonny 2 Ltd were drawn up as soon as Parents Forever Ltd had acquired the shares in both subsidiaries. You are to draw up a consolidated balance sheet.

**Parents Forever Balance Sheet**

	£
Investments in subsidiaries:	
Sonny 1 Ltd 28,000 Ordinary £1 shares	70,000
Sonny 2 Ltd 30,000 Ordinary £1 shares	50,000
Fixed assets	91,000
Current assets	<u>27,000</u>
	<u>238,000</u>
Share capital – Ordinary £1 shares	160,000
Profit and loss account	58,000
General reserve	<u>20,000</u>
	<u>238,000</u>





### Sonny 1 Balance Sheet

	£
Fixed assets	62,000
Current assets	<u>23,000</u>
	<u>85,000</u>
Share capital – Ordinary £1 shares	40,000
Profit and loss account	30,000
General reserve	<u>15,000</u>
	<u>85,000</u>

### Sonny 2 Balance Sheet

	£
Fixed assets	36,000
Current assets	<u>5,000</u>
	<u>41,000</u>
Share capital – Ordinary £1 shares	30,000
Profit and loss account	9,000
General reserve	<u>2,000</u>
	<u>41,000</u>

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Consolidation of balance sheets: basic mechanics (II)

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the implications when the date of acquisition and the group balance sheet date do not coincide
- explain that the calculation of goodwill is performed as at the date of acquisition
- describe the difference in treatment between pre- and post-acquisition reserves of subsidiary undertakings

## Introduction

In this chapter, you'll learn that goodwill is calculated on the basis of the financial position at the date of acquisition and that it does not change thereafter. You'll also learn that reserves acquired when an entity is acquired are not available for distribution and you'll learn how to show post-acquisition profits and losses in the consolidated balance sheet.

### 18.1 Background

In the previous chapter, the consolidated balance sheets were drawn up immediately the shares in the subsidiary had been acquired. This is rarely the case in practice. However, **even though the consolidation is normally performed at the end of the parent company's accounting period and, thus, frequently some time after the acquisition, it must also be prepared as at the time the acquisition occurred.** A similar thing must be done with the profit and loss account of the subsidiary and any of the balances on the other reserve accounts which have changed since the date of acquisition.

### 18.2 Goodwill in later years' financial statements

Goodwill is calculated at the date of acquisition and remains unchanged as the years go by. It is important to remember this. Say, for instance, that the calculation of goodwill was made on an acquisition made on 31 December 20X3 and that the goodwill figure was £5,000. Even if the calculation were made one year later, on 31 December 20X4, the calculation must use the reserves etc. as on 31 December 20X3 as this is when they were acquired, and so the figure of goodwill will always be £5,000. This would be true no matter how much time passed before anyone performed the calculation.

However, in examinations, the goodwill figure may still have to be calculated, even though the consolidated balance sheet being drawn up is 5, 10 or 20 years after the company became a subsidiary. This has to be done because the previous working papers which show the figure to use are not available to an examinee.

## 18.3 Capital reserves

As you would expect, when companies purchase their own shares, previous holders of the shares have, effectively, had their investment returned to them and so cease to be shareholders in the company. The company has, in effect, returned some of its capital to those ex-shareholders. Unless special permission has been granted by the court, it is illegal for any company to return its capital to its shareholders in any other way. If a parent undertaking were to pay money to acquire a company as a subsidiary, and then distributed as dividends the assets it had bought, this would be the same as returning its capital to its shareholders and is, therefore, not allowed.

Let's look at an example. P pays £15 to acquire 100 per cent of the shares of S, and the share capital of S consists of £10 of shares and £5 profit and loss account. Thus, to acquire a capital asset (i.e. ownership of S), the holding company has parted with £15. If the balance of the profit and loss account of S were merely added to the profit and loss balance of P in the consolidated balance sheet, the £5 balance of S could be regarded as being distributable as cash dividends to the shareholders of P. As this £5 of reserves has been bought as a capital asset, a dividend payment that was in part funded by this £5 of reserves would amount to a return of capital to the shareholders of P.

To prevent this, the balance of the profit and loss account of S on acquisition is capitalised, i.e. it is brought into the balance sheet through the calculation of goodwill and is not shown in the consolidated balance sheet as a profit and loss account balance. On the other hand, the whole of any profit made by S since acquisition will clearly belong to P's shareholders as P owns 100 per cent of the shares of S.

### Activity 18.1

Why do you think it would be a 'bad' thing to distribute as dividends the reserves acquired at the time of acquisition?

### Exhibit 18.1

*Where the parent undertaking holds 100 per cent of the subsidiary undertaking's shares.*

P acquires the shares on 31 December 20X4. The balance sheets one year later are as follows:

#### P Balance Sheet as at 31 December 20X5

Investment in subsidiary: 10 shares bought 31.12.20X4	(A)	£
Stock		18
Bank		11
		<u>3</u>
		<u>32</u>
Share capital		20
Profit and loss		<u>12</u>
		<u>32</u>

**S Balance Sheet as at 31 December 20X5**

	£	£
Stock		14
Bank		<u>2</u>
		<u>16</u>
Share capital	(B)	10
Profit and loss:		
As at 31.12.20X4	(C)	5
Profit for 20X5	(D)	<u>1</u>
		<u>6</u>
		<u>16</u>

The shares were acquired on 31 December 20X4, therefore the calculation of the goodwill is based on the financial position of those firms at that date. Thus P obtained the following for (A) £18 at 31 December 20X4: shares (B) £10 and profit and loss (C) £5 = £15. Goodwill therefore amounted to £3. The profit made by S during 20X5 was obviously made after acquisition and does not therefore come into the goodwill calculation. The figure of (D) £1 is a reserve which belongs wholly to P, as P in fact owns all of the shares of S. This (D) £1 is added to the reserves shown in the consolidated balance sheet.

**P Consolidated Balance Sheet as at 31 December 20X5**

	£	£
Goodwill		3
Stock (£11 + £14)		25
Bank (£3 + £2)		<u>5</u>
		<u>33</u>
Share capital		20
Profit and loss (P £12 + S £1)		<u>13</u>
		<u>33</u>

**Exhibit 18.2**

*Where the parent holds 100 per cent of the shares of the subsidiary and there is a post-acquisition loss.*

**P Balance Sheet as at 31 December 20X5**

	£	£
Investment in subsidiary:		
10 shares bought 31.12.20X4	(E)	19
Stock		10
Bank		<u>4</u>
		<u>33</u>
Share capital		20
Profit and loss:		
As at 31.12.20X4		7
Add Profit 20X5		<u>6</u>
		<u>13</u>
		<u>33</u>





### S Balance Sheet as at 31 December 20X5

		£	£
Stock			9
Bank			<u>2</u>
			<u>11</u>
Share capital	(F)		10
Profit and loss			
As at 31.12.20X4	(G)	4	
Less Loss 20X5	(I)	(3)	
			<u>1</u>
			<u>11</u>

In calculating goodwill, the items (F) £10 and (G) £4 are cancelled against the amount paid (E) £19, thus the goodwill is £5. The loss (I) has been incurred since acquisition. A profit since acquisition, as in Exhibit 18.1, adds to the reserves in the consolidated balance sheet, therefore a loss must be deducted.

### P Consolidated Balance Sheet as at 31 December 20X5

		£
Goodwill		5
Stock (£10 + £9)		19
Bank (£4 + £2)		<u>6</u>
		<u>30</u>
Share capital		20
Profit and loss (£13 – (I)£3)		<u>10</u>
		<u>30</u>

### Exhibit 18.3

*Where the parent acquires less than 100 per cent of the shares of the subsidiary and there is a post-acquisition profit.*

### P Balance Sheet as at 31 December 20X5

		£	£
Investment in subsidiary: 8 shares bought 31.12.20X4	(J)		28
Stock			7
Bank			<u>3</u>
			<u>38</u>
Share capital			20
Profit and loss			
As at 31.12.20X4		10	
Add Profit 20X5		<u>8</u>	
			<u>18</u>
			<u>38</u>

**S Balance Sheet as at 31 December 20X5**

	£	£
Stock		28
Bank		<u>2</u>
		<u>30</u>
Share capital	(K)	10
Profit and loss		
As at 31.12.20X4	(L)	15
Add Profit 20X5	(M)	<u>5</u>
	(N)	<u>20</u>
		<u>30</u>

P has given (J) £28 to take over 80 per cent of (K) + (L), i.e. 80 per cent of (£10 + £15) = £20. Therefore goodwill is £8. The profit for 20X5 (M) £5 is also owned 80 per cent by P = £4, and as this has been earned since the shares in S were bought, the whole of this belongs to the shareholders of P and is also distributable to them, therefore it can be shown with other profit and loss account balances in the consolidated balance sheet.

The minority interest is 20 per cent of (K) £10 + (N) £20 = £6. It must be pointed out that, although the holding company splits up the profit and loss account balances into pre-acquisition and post-acquisition, there is no point in the minority interest doing likewise. It would, however, amount to exactly the same answer if they did, because 20 per cent of (K) £10 + (L) £15 + (M) £5 still comes to £6, i.e. exactly the same as 20 per cent of (N) £20 + (K) £10 = £6.

**P Consolidated Balance Sheet as at 31 December 20X5**

	£
Goodwill	8
Stock (£7 + £28)	35
Bank (£3 + £2)	<u>5</u>
	<u>48</u>
Share capital	20
Profit and loss (P £18 + £4)	22
Minority interest (shares £2 + profit and loss £4):	<u>6</u>
	<u>48</u>

If there had been a post-acquisition loss, then this would have been deducted from P's profit and loss account balance of £18 when the consolidated balance sheet was drawn up.

**Learning outcomes**

You should now have learnt:

- 1 Goodwill must be calculated on the basis of the fair values at the date of acquisition of the consideration given and the net assets acquired.
- 2 Once calculated, there is no point in recalculating the goodwill on an acquisition at a future balance sheet date as the value determined will not alter.
- 3 Pre-acquisition reserves of a subsidiary are part of the capital acquired and are cancelled out on consolidation; they are not treated as reserves of the group.
- 4 Pre-acquisition reserves acquired are not available for distribution to the shareholders of the parent company.
- 5 The group's share of a subsidiary undertaking's post-acquisition profits and losses are included on consolidation with the reserves of the rest of the group.

## Answer to activity

- 18.1** The £5 reserves acquired by P on acquisition of S were not earned by P and do not represent profits made by P. As such, it would be inappropriate to distribute them in this way.

## Review questions

**Note:** In all these review questions, the share capital of all the companies comprises of ordinary shares of £1 each.

- 18.1** Pa Ltd buys 100 per cent of the shares of Son Ltd on 31 December 20X2. The balance sheets of the two companies on 31 December 20X3 are as shown. You are to draw up a consolidated balance sheet as at 31 December 20X3.

### Pa Balance Sheet as at 31 December 20X3

	£	£
Investment in subsidiary:		
50,000 shares bought 31.12.20X2		70,000
Fixed assets		84,000
Current assets		<u>38,000</u>
		<u>192,000</u>
Share capital		90,000
Profit and loss account:		
As at 31.12.20X2	56,000	
Add Profit for 20X3	<u>46,000</u>	
		<u>102,000</u>
		<u>192,000</u>

### Son Balance Sheet as at 31 December 20X3

	£	£
Fixed assets		61,000
Current assets		<u>13,000</u>
		<u>74,000</u>
Share capital		50,000
Profit and loss account:		
As at 31.12.20X2	8,000	
Add Profit for 20X3	<u>16,000</u>	
		<u>24,000</u>
		<u>74,000</u>

**18.2** Pa and Ma Ltd bought 60 per cent of the shares of Son and Daughter Ltd on 31 March 20X4. The balance sheets of the two companies on 31 March 20X5 are as follows. You are to draw up a consolidated balance sheet as at 31 March 20X5.

**Pa and Ma Balance Sheet as at 31 March 20X5**

	£	£
Investment in Son and Daughter Ltd:		
60,000 shares bought 31.3.20X4		64,000
Fixed assets		190,000
Current assets		<u>46,000</u>
		<u>300,000</u>
Share capital		200,000
Profit and loss account:		
As at 31.3.20X4	31,000	
Add Profit for 20X5	<u>39,000</u>	
		70,000
General reserve		<u>30,000</u>
		<u>300,000</u>

**Son and Daughter Balance Sheet as at 31 March 20X5**

	£	£
Fixed assets		112,000
Current assets		<u>21,000</u>
		<u>133,000</u>
Share capital		100,000
Profit and loss account:		
As at 31.3.20X4	16,000	
Less Loss for 20X5	( <u>3,000</u> )	
		13,000
General reserve (unchanged since 20X1)		<u>20,000</u>
		<u>133,000</u>

**18.3A** Papai Ltd bought 51 per cent of the shares in Sons and Co Ltd on 31 October 20X7. From the following balance sheets you are to draw up the consolidated balance sheet as at 31 October 20X8.

**Papai Balance Sheet as at 31 October 20X8**

	£	£
Investment in Sons and Co Ltd: 40,800 shares		60,000
Fixed assets		74,000
Current assets		<u>36,000</u>
		<u>170,000</u>
Share capital		125,000
Profit and loss account:		
As at 31.10.20X7	19,000	
Add Profit for 20X8	<u>26,000</u>	
		45,000
		<u>170,000</u>







### Sons and Co Balance Sheet as at 31 October 20X8

	£	£
Fixed assets		91,000
Current assets		<u>19,000</u>
		<u>110,000</u>
Share capital		80,000
Profit and loss account:		
As at 31.10.20X7	7,000	
Add Profit for 20X8	<u>8,000</u>	
		15,000
General reserve (unchanged since 20X7)		<u>15,000</u>
		<u>110,000</u>

**18.4** Parent Company Ltd buys shares in Subsidiary 1 and Subsidiary 2 on 31 December 20X7. You are to draft the consolidated balance sheet as at 31 December 20X8 from the following:

### Parent Company Balance Sheet as at 31 December 20X8

	£	£
Investment:		
Subsidiary 1: 80,000 shares		125,000
Subsidiary 2: 30,000 shares		49,000
Fixed assets		230,000
Current assets		<u>74,000</u>
		<u>478,000</u>
Share capital		350,000
Profit and loss account:		
As at 31.12.20X7	41,000	
Add Profit for 20X8	<u>37,000</u>	
		78,000
General reserve		<u>50,000</u>
		<u>478,000</u>

### Subsidiary 1 Balance Sheet as at 31 December 20X8

	£	£
Fixed assets		147,000
Current assets		<u>39,000</u>
		<u>186,000</u>
Share capital		100,000
Profit and loss account:		
As at 31.12.20X7	22,000	
Add Profit for 20X8	<u>34,000</u>	
		56,000
General reserve (same as 31.12.20X7)		<u>30,000</u>
		<u>186,000</u>

## Subsidiary 2 Balance Sheet as at 31 December 20X8

	£	£
Fixed assets		38,000
Current assets		<u>6,000</u>
		<u>44,000</u>
Share capital		30,000
Profit and loss account:		
As at 31.12.20X7	6,000	
Less Loss for 20X8	<u>(2,000)</u>	
		4,000
General reserve (same as 31.12.20X7)		<u>10,000</u>
		<u>44,000</u>

**18.5A** P Ltd bought 40,000 shares in S1 Ltd and 27,000 shares in S2 Ltd on 31 December 20X2. The following balance sheets were drafted as at 31 December 20X3. You are to draw up a consolidated balance sheet as at 31 December 20X3.

## P Balance Sheet as at 31 December 20X3

	£	£
Investments in subsidiaries		
S1 Ltd 40,000 shares		49,000
S2 Ltd 27,000 shares		30,500
Fixed assets		90,000
Current assets		<u>80,500</u>
		<u>250,000</u>
Share capital		200,000
Profit and loss account:		
As at 31.12.20X2	11,000	
Add Profit for 20X3	<u>16,000</u>	
		27,000
General reserve		<u>23,000</u>
		<u>250,000</u>

## S1 Balance Sheet as at 31 December 20X3

	£	£
Fixed assets		38,200
Current assets		<u>19,200</u>
		<u>57,400</u>
Share capital		50,000
Profit and loss account:		
As at 31.12.20X2	3,000	
Less Loss for 20X3	<u>(1,600)</u>	
		1,400
General reserve (as at 31.12.20X2)		<u>6,000</u>
		<u>57,400</u>





### S2 Balance Sheet as at 31 December 20X3

	£	£
Fixed assets		31,400
Current assets		<u>14,600</u>
		<u>46,000</u>
Share capital		36,000
Profit and loss account:		
As at 31.12.20X2	4,800	
Add Profit for 20X3	<u>3,400</u>	
		8,200
General reserve (as at 31.12.20X2)		<u>1,800</u>
		<u>46,000</u>

**18.6A** The following information relates to Heather Limited and its subsidiary, Thistle Limited.

**1 Heather Limited**

Retained profits as at 31 March 20X8 £700,000.

80,000 ordinary shares were purchased in Thistle Limited on 1 April 20X1 for £150,000.

**2 Thistle Limited**

Retained profits as at 1 April 20X1 £50,000.

Retained profits as at 31 March 20X8 £120,000.

There were no other capital or revenue account balances at either of these dates.

Issued share capital: 100,000 ordinary shares of £1 each.

**3** Goodwill arising on consolidation is written off immediately on acquisition against reserves.

**Required:**

Make the following calculations:

- the goodwill arising on the acquisition of Thistle Limited;
- the retained profits to be shown in the Heather Group balance sheet as at 31 March 20X8;
- the minority interest in the Heather Group as at 31 March 20X8.

(Association of Accounting Technicians)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Intercompany dealings: indebtedness and unrealised profit in stocks

## Learning objectives

After you have studied this chapter, you should be able to:

- explain how to treat intra-group indebtedness upon consolidation
- explain how to treat unrealised intragroup profits upon consolidation

## Introduction

In this chapter, you'll learn how to deal with intragroup debts and unrealised profits in stocks sold between companies in a group, and so learn how to reduce the values shown in individual group financial statements so as to eliminate intra-group items prior to preparation of consolidated financial statements.

### 19.1 Intra-group debts

When a subsidiary owes money to its parent, the amount owing will be shown as a debtor in the parent's balance sheet and as a creditor in the subsidiary's balance sheet. The Companies Acts require that such debtor and creditor balances are shown separately in the company balance sheets from other debtor and creditor balances. When this type of situation exists it is really just 'two sides of the same coin'. That is, the debtor balance and the creditor balance of the two companies can be paired up and so cancel each other out when consolidated financial statements are prepared. As a result, neither amount is included in the consolidated financial statements.

The same treatment applies to debts owed by the parent to the subsidiary, or to debts owed by one subsidiary to another subsidiary. The treatment is exactly the same whether or not the subsidiary is 100 per cent owned.

Let's look at an example.

**Exhibit 19.1***Where the subsidiary owes money to the parent.***P Balance Sheet**

	£	£	£
Investment in subsidiary: 10 shares			10
Stock		13	
Debtors:			
Owing from subsidiary	(A) 4		
Other debtors	<u>7</u>		
		11	
Bank		<u>1</u>	
		25	
Less: Creditors		( 9)	
			<u>16</u>
			<u>26</u>
Share capital			20
Profit and loss			<u>6</u>
			<u>26</u>

**S Balance Sheet**

	£	£
Stock		6
Debtors		13
Bank		<u>3</u>
		22
Less: Creditors		
Owing to parent	(B) 4	
Other creditors	<u>8</u>	
		(12)
Share capital		<u>10</u>
		<u>10</u>

**P & S Consolidated Balance Sheet**

	£
Stock (£13 + £6)	19
Debtors (£7 + £13)	20
Bank (£1 + £3)	<u>4</u>
	43
Less: Creditors (£9 + £8)	(17)
	<u>26</u>
Share capital	<u>20</u>
Profit and loss	<u>6</u>
	<u>26</u>

**19.2 Unrealised profit in stock**

Some companies in a group may not trade with each other. If so, obviously, the stocks held at the balance sheet date will not include goods bought from another member of the group.

It is also possible that companies within a group may have traded with each other but, at the balance sheet date, all such goods have been sold to individuals and organisations unconnected with the group. The result is that none of the companies in the group will have any such goods included in their year-end stock.

However, when companies in a group have traded with each other, and one or more of the companies has stock at the balance sheet date which has been bought from another group member, adjustments to the stock figure must be made before consolidation is carried out.

If the goods have been traded between members of the group at cost price, the goods would be included in the purchasing company's stock in its balance sheet. In this case, the consolidated balance sheet will not be altered. Because the goods were transferred at cost price it will not offend accounting practice to add together all of the stock figures in the group company balance sheets and show the total in the consolidated balance sheet, as the total will represent the total cost to the group of the unsold goods within the group.

However, goods are usually sold between companies within a group at prices above the original cost price paid by the selling company. If one or more of the companies in a group has goods in its stock at the balance sheet date which have been bought from another group member at above cost price, the goods would be included at the higher price in the purchasing company's stock-in-trade in its balance sheet.

### Activity 19.1

If the amount at which the stock is included in the balance sheet of each company is the amount the stock cost that company, why would the total derived not represent the total cost of the unsold goods within the group?

When you have a situation like that described in Activity 19.1, you can't simply add together all of the stock figures in the group company balance sheets and show the total in the consolidated balance sheet. The total derived would not represent the total cost of the unsold goods held within the group because it would include the unrealised profit which the selling company added to the cost of the goods when it sold them to the other group company which has those goods in stock at its balance sheet date.

Suppose that the parent, P, owns all the shares in S, the subsidiary, and that P sold goods for £20 to S which had cost P £12. Also assume that S had sold none of these goods by the balance sheet date. In the balance sheet of S, the goods will be included in stock at £20, while the profits made by P will include the £8 profit recorded in buying the goods for £12 and selling them for £20. Although this is true reflection of what occurred from each company's point of view, it most certainly is not true from the perspective of the group. The goods have not passed to anyone outside the group. Therefore, the profit of £8 has not been realised by the group and so must be eliminated from both sets of financial statements before consolidation takes place.

### Activity 19.2

Why do you think this intra-group profit must be eliminated upon consolidation?

If you are finding this difficult to understand, think back to when you were studying departmental accounts in *Business Accounting 1* and what you needed to do when departments sold goods to each other at above or below cost.

### Activity 19.3

What could be the benefit to a group if companies within the group were to sell goods to other companies in the group at below cost?

## 19.3 Realisation of profits

Going back to the basic accounting concepts, the realisation concept states that profit should not be recognised until goods have been passed to the customer. You have just learnt that, as consolidated financial statements are concerned with an overall picture of a group, any profits on intra-group sales of goods that have not yet been sold to customers unconnected with the group are unearned and so must be eliminated before consolidation is performed. You saw an example of this in the previous section. Let's now consider some more complex examples.

If P had sold goods which had cost £12 to S, a 100 per cent owned subsidiary, for £20, and S had sold  $\frac{3}{4}$  of the goods for £22 by the balance sheet date, the situation would obviously be different. P will have shown a profit in its profit and loss account for these sales of £8. In addition, S will have shown a profit in its profit and loss account for the sales made of £7, i.e.  $\text{£}22 - \frac{3}{4} \text{ of } \text{£}20$ . The two profit and loss accounts show total profits of  $\text{£}8 + \text{£}7 = \text{£}15$ .

However, looking at the group as a whole, these goods cost the group £12. Three-quarters of them have been sold to entities unconnected with the group, so that the cost of goods sold outside the group is  $\frac{3}{4}$  of £12 = £9. As these were sold by S, the profit realised by the group is  $\text{£}22 - \text{£}9 = \text{£}13$ . This is £2 less than that shown by adding up the separate figures for each company in the group which, of course, is  $\frac{1}{4}$  of the profit P charged S. (This is as you would expect because  $\frac{1}{4}$  of the goods sold by P to S are still held in stock by S.)

Thus, the group figures would be overstated by £2 if the separate figures were merely added together without any adjustment. In addition, the stock would be overvalued by £2 if the stock figures of the two companies were simply added together. The original cost to the group of the goods held in stock by S was  $\frac{1}{4}$  of £12 = £3. The adjustment needed in the consolidation process involves deducting £2 from the profit and loss balance of P and £2 from the stock of S. Doing so will remove the unrealised intra-group profits. This adjustment can be shown in tabular form as:

	£
(a) Cost of goods to P	12
(b) Sold to S for	20
(c) Sold by S, $\frac{3}{4}$ for	22
(d) Stock of S at balance sheet date at cost to S $\frac{1}{4}$ of (b)	5
(e) Stock of S at balance sheet date at cost to P $\frac{1}{4}$ of (a)	3
(f) Excess of S balance sheet value of stock over cost to group (d) – (e)	2
<hr/>	
(g) Profit shown in P profit and loss account (b) – (a) =	£8
(h) Profit shown in S profit and loss account (c) $\text{£}22 - \frac{3}{4}$ of (b) =	£7
(i) Profit shown in the profit and loss accounts of P and S = (g) + (h) =	£15
(j) Actual profit made by the group dealing with outsiders (c) $\text{£}22$ less [ $\frac{3}{4}$ of (a) $\text{£}12$ ] $\text{£}9 =$	£13
(k) Profit recorded by individual companies exceeds profit made by the group's dealing with outsiders (i) – (j) =	£2

This analysis confirms that the action needed before preparing the consolidated balance sheet is to deduct (f) £2 from the combined stock figure, and to deduct (k) £2 from the combined profit and loss account figure.

Let's apply what you have just learnt by looking at another example.

**Exhibit 19.2**

*Where the stock of one company includes goods bought from another company in the same group.*

**P Balance Sheet as at 31 December 20X3**

	£	£
Investment in subsidiary:		
10 shares bought 31.12.20X2		16
Stock		24
Bank		<u>6</u>
		<u>46</u>
Share capital		20
Profit and loss account:		
As at 31.12.20X2		8
Profit for 20X3	(C)	<u>18</u>
		<u>26</u>
		<u>46</u>

**S Balance Sheet as at 31 December 20X3**

	£	£
Stock	(D)	22
Bank		<u>3</u>
		<u>25</u>
Share capital		10
Profit and loss account:		
As at 31.12.20X2		6
Profit for 20X3		<u>9</u>
		<u>15</u>
		<u>25</u>

During the year, P sold goods to S for £28. P paid £16 when it purchased the goods. The sale to S therefore resulted in a profit to P of £12. Of these goods, two-thirds had been sold by S at the balance sheet date. The stock of S (D) includes therefore £4 unrealised profit ( $\frac{1}{3} \times £12$ ). P's profit for the year of (C) £18 also includes £4 unrealised profit. When consolidating the two balance sheets, £4 therefore needs to be deducted from each of those figures.

**P Consolidated Balance Sheet as at 31 December 20X3**

	£
Stock (S £22 – £4 + P £24)	42
Bank (P £6 + S £3)	<u>9</u>
	<u>51</u>
Share capital	20
Profit and loss accounts (S £9 + P £8 + £18 – £4)	<u>31</u>
	<u>51</u>

*Note:* In Exhibit 19.2, the subsidiary was wholly owned by the parent. The final figures would have been exactly the same if the subsidiary had sold the goods to the parent instead of vice versa.



## 19.4 Partially-owned subsidiaries and unrealised profits

In Exhibit 19.2 the subsidiary was 100 per cent controlled and the unrealised profit in stock was £4. A few years ago there were three possible methods of dealing with the adjustments needed – two of the methods took into account the actual percentage of shares owned. However, FRS 2 requires that intra-group profits or losses are eliminated in full. As a result, those two proportional elimination methods can no longer be used.

This means that if in Exhibit 19.2, S had been 75 per cent owned by P the full inter-group profit of £4 would still be deducted from the stock amount in the consolidated balance sheet, and the full £4 would also be deducted from the profit and loss account of P when it is consolidated.

### Activity 19.4

Why do you think the rules were changed upon the introduction of FRS 2?

### Learning outcomes

You should now have learnt:

- 1 Intra-group indebtedness must be eliminated upon consolidation, irrespective of the proportion of the holding in the subsidiary undertaking(s) involved.
- 2 Unrealised intra-group profits must be eliminated upon consolidation, irrespective of the proportion of the holding in the subsidiary undertaking(s) involved.

### Answers to activities

- 19.1** Because the original cost when they were first purchased by a group company was lower. For example, imagine S1 bought £10 of goods from a company that was not part of the group and then sold them to S2 for £12. At the end of the accounting period, S2 still had all those goods in stock so its stock figure in the balance sheet is £12, which is £2 more than the goods cost the group.
- 19.2** If it wasn't eliminated, groups could show far greater profits than they are actually making. For example, imagine S1 bought £10 of goods from a company that was not part of the group and then sold them to S2 for £12. At the end of the accounting period, S2 still had all those goods in stock so its stock figure in the balance sheet is £12. S1 would include a profit of £2 on these goods in its profit for the period. S2 would include the £12 in its purchases and in its closing stock, resulting in no effect upon its profit. On consolidation, the group would include the £2 profit made by S1 in the group profit for the period.
- 19.3** They could show far less profits by selling within the group at below cost, so delaying paying tax on some of their profits for a further 12 months.
- 19.4** By definition, subsidiaries are members of a group because the parent company can exercise a dominant influence over them. Unscrupulous parent companies could, therefore, require less than 100 per cent subsidiaries to purchase goods at above or below cost from other companies in the group and could require them not to sell those goods. Prior to the release of FRS 2, this power could be abused to manipulate profits of the group, as the minority share of the profits and losses could have been included in the profits and losses of the subsidiary and thus the group, making the group appear more or less profitable than it actually was. The change made when FRS 2 was issued eliminated the possibility of including such unrealised profits and losses in the consolidated financial statements.

## Review questions

**Note:** Unless otherwise indicated, the share capital of the companies in these review questions comprises ordinary shares of £1 each.

**19.1** Prepare a consolidated balance sheet from the following details as at 31 March 20X6.

### Parent Balance Sheet as at 31 March 20X6

	£	£
Investment in subsidiary: 50,000 shares bought 31.3.20X5		105,000
Fixed assets		<u>140,000</u>
		245,000
Stock	26,000	
Debtors	30,000	
Bank	<u>4,000</u>	
	60,000	
Less: Creditors	<u>(3,000)</u>	
		<u>57,000</u>
		<u>302,000</u>
Share capital		200,000
Profit and loss:		
As at 31.3.20X5	45,000	
Profit for 20X6	<u>50,000</u>	
		95,000
General reserve		<u>7,000</u>
		<u>302,000</u>

### Subsidiary Balance Sheet as at 31 March 20X6

	£	£
Fixed assets		104,000
Stock		19,000
Debtors		14,000
Bank		<u>6,000</u>
		143,000
Less: Creditors		<u>(7,000)</u>
		<u>136,000</u>
Share capital		50,000
Profit and loss:		
As at 31.3.20X5	35,000	
Profit for 20X6	<u>51,000</u>	
		86,000
		<u>136,000</u>

During the year, Parent sold goods which had cost £1,100 to Subsidiary for £1,800. None of these goods had been sold by the balance sheet date.

At the balance sheet date Parent owes Subsidiary £2,000.



→ **19.2** Draw up a consolidated balance sheet as at 31 December 20X7 from the following:

**Pop and Mom Balance Sheet as at 31 December 20X7**

	£	£
Investment in subsidiary: 55,000 shares bought 31.12.20X6		55,000
Fixed assets		<u>124,000</u>
		179,000
Stock	22,000	
Debtors	29,000	
Bank	<u>8,000</u>	
	59,000	
Less: Creditors	<u>(6,000)</u>	
		<u>53,000</u>
		<u>232,000</u>
Share capital		175,000
Profit and loss:		
As at 31.12.20X6	84,000	
Less Loss for 20X7	<u>(27,000)</u>	
		<u>57,000</u>
		<u>232,000</u>

**Sonny Balance Sheet as at 31 December 20X7**

	£	£
Fixed assets		89,000
Stock	27,000	
Debtors	38,000	
Bank	<u>2,000</u>	
	67,000	
Less: Creditors	<u>(3,000)</u>	
		<u>64,000</u>
		<u>153,000</u>
Share capital		90,000
Profit and loss:		
As at 31.12.20X6	36,000	
Profit for 20X7	<u>27,000</u>	
		<u>63,000</u>
		<u>153,000</u>

At the balance sheet date, Sonny owes Pop and Mom £1,600.

During the year Pop and Mom sold goods which had cost £3,000 to Sonny for £4,800. Three-quarters of these goods had been sold by Sonny by the balance sheet date.

**19.3** Prepare a consolidated balance sheet from the following details as at 31 March 20X3.**Parents for Siblings Balance Sheet as at 31 March 20X3**

	£	£
Investment in subsidiaries:		
Sibling A 50,000 shares bought 31.3.20X2		65,000
Sibling B 45,000 shares bought 31.3.20X3		<u>58,000</u>
		123,000
Fixed assets		82,000
Stock	31,000	
Debtors	14,000	
Bank	<u>7,000</u>	
	52,000	
Less Creditors	(11,000)	
		<u>41,000</u>
		<u>246,000</u>
Share capital		175,000
Profit and loss		
As at 31.3.20X2	36,000	
Add Profit for 20X3	<u>15,000</u>	
		51,000
General reserve		<u>20,000</u>
		<u>246,000</u>

**Sibling A Balance Sheet as at 31 March 20X3**

	£	£
Fixed assets		39,000
Stock	18,000	
Debtors	9,000	
Bank	<u>2,000</u>	
	29,000	
Less Creditors	(4,000)	
		<u>25,000</u>
		<u>64,000</u>
Share capital		50,000
Profit and loss:		
As at 31.3.20X2	17,000	
Less Loss for 20X3	<u>(12,000)</u>	
		5,000
General reserve (as at 31.3.20X2)		<u>9,000</u>
		<u>64,000</u>





### Sibling B Balance Sheet as at 31 March 20X3

	£	£
Fixed assets		54,000
Stock	13,000	
Debtors	16,000	
Bank	<u>5,000</u>	
	44,000	
Less Creditors	( 8,000)	<u>36,000</u>
		<u>80,000</u>
Share capital		50,000
Profit and loss:		
As at 31.3.20X2	11,000	
Add Profit for 20X3	<u>19,000</u>	
		<u>30,000</u>
		<u>80,000</u>

At the balance sheet date, Sibling B owed Sibling A £1,000 and Parents for Siblings owed Sibling B £1,500.

During the year, Parents for Siblings had sold to Sibling A for £3,220 goods costing £2,500. Of these goods, one-third had been sold by the year end. Parents for Siblings had also sold goods costing £700 to Sibling B for £1,050, of which none had been sold by the year end.

**19.4A** You are presented with the following information from the Seneley group of companies for the year to 30 September 20X6:

	<i>Seneley plc</i> £000	<i>Lowe Ltd</i> £000	<i>Wright Ltd</i> £000
Tangible fixed assets	<u>225</u>	<u>300</u>	<u>220</u>
Investments			
Shares in group companies:			
Lowe Ltd	450	—	—
Wright Ltd	<u>130</u>	<u>—</u>	<u>—</u>
	<u>580</u>	<u>—</u>	<u>—</u>
<i>Current assets</i>			
Stocks	225	150	45
Trade debtors	240	180	50
Cash at bank and in hand	<u>50</u>	<u>10</u>	<u>5</u>
	<u>515</u>	<u>340</u>	<u>100</u>
<i>Creditors: amounts falling due within one year</i>			
Trade creditors	( 320)	( 90)	( 70)
Net current assets	<u>195</u>	<u>250</u>	<u>30</u>
	<u>1,000</u>	<u>550</u>	<u>250</u>
<i>Capital and reserves</i>			
Called-up share capital	800	400	200
Profit and loss	<u>200</u>	<u>150</u>	<u>50</u>
	<u>1,000</u>	<u>550</u>	<u>250</u>

*Additional information:*

- The authorised, issued and fully paid share capital of all three companies consists of £1 ordinary shares.
- Seneley purchased 320,000 shares in Lowe Ltd on 1 October 20X3, when Lowe's profit and loss account balance stood at £90,000.

- (c) Seneley purchased 140,000 shares in Wright Ltd on 1 October 20X5, when Wright's profit and loss account balance stood at £60,000.
- (d) During the year to 30 September 20X6, Lowe had sold goods to Wright for £15,000. These goods had cost Lowe £7,000, and Wright still had half of these goods in stock as at 30 September 20X6. Minority interests are not charged with their share of any unrealised stock profits.
- (e) Included in the respective trade creditor and trade debtor balances as at 30 September 20X6 were the following intercompany debts:
- Seneley owed Wright £5,000
  - Lowe owed Seneley £20,000
  - Wright owed Lowe £25,000.
- (f) Seneley does not amortise goodwill arising on consolidation.

**Required:**

Prepare the Seneley group's consolidated balance sheet as at 30 September 20X6. Your workings should be submitted.

(Association of Accounting Technicians)

**19.5A** You are to draw up a consolidated balance sheet as at 31 December 20X5 from the following:

**Pa and Mum Balance Sheet as at 31 December 20X5**

	£	£
Investment in subsidiaries:		
Son 1 90,000 shares bought 31.12.20X4		125,000
Son 2 56,000 shares bought 31.12.20X4		<u>85,000</u>
		210,000
Fixed assets		170,000
Stock	43,000	
Debtors	38,000	
Bank	<u>17,000</u>	
	98,000	
Creditors	<u>(16,000)</u>	82,000
		<u>462,000</u>
Share capital		325,000
Profit and loss:		
As at 31.12.20X4	53,000	
Less Loss for 20X5	<u>(16,000)</u>	
		37,000
General reserve (as at 31.12.20X4)		<u>100,000</u>
		<u>462,000</u>

**Son 1 Balance Sheet as at 31 December 20X5**

	£	£
Fixed assets		72,000
Stock	34,000	
Debtors	21,000	
Bank	<u>18,000</u>	
	73,000	
Creditors	<u>( 6,000)</u>	67,000
		<u>139,000</u>
Share capital		90,000
Profit and loss:		
As at 31.12.20X4	23,000	
Add Profit for 20X5	<u>26,000</u>	
		49,000
		<u>139,000</u>





### Son 2 Balance Sheet as at 31 December 20X4

	£	£
Fixed assets		80,000
Stock	24,000	
Debtors	26,000	
Bank	<u>13,000</u>	
	63,000	
Creditors	( 8,000)	<u>55,000</u>
		<u>135,000</u>
Share capital		100,000
Profit and loss:		
As at 31.12.20X4	27,000	
Less Loss for 20X5	( 4,000)	
		23,000
General reserve (as at 31.12.20X4)		<u>12,000</u>
		<u>135,000</u>

At the balance sheet date, Son 1 owed Pa and Mum £2,500 and Son 2 £1,100, and Pa and Mum owed Son 2 £2,100.

Pa and Mum had sold goods which had cost £1,400 to Son 2 for £2,100, and of these goods one-half had been sold by Son 2 by the year end.

### 19.6 The following summarised information relates to the Pagg group of companies.

#### Balance Sheet at 31 March 20X0

	<i>Pagg plc</i> £000	<i>Ragg Ltd</i> £000	<i>Tagg Ltd</i> £000
Tangible fixed assets at net book value	<u>2,000</u>	<u>900</u>	<u>600</u>
<i>Investments</i>			
800,000 ordinary shares in Ragg Ltd	3,000	—	—
300,000 ordinary shares in Tagg Ltd	<u>1,000</u>	<u>—</u>	<u>—</u>
	<u>4,000</u>	<u>—</u>	<u>—</u>
<i>Current assets</i>			
Stocks	1,300	350	100
Debtors	3,000	200	300
Cash	<u>200</u>	<u>20</u>	<u>50</u>
	<u>4,500</u>	<u>570</u>	<u>450</u>
<i>Current liabilities</i>			
Creditors	(4,000)	( 270)	(400)
	<u>6,500</u>	<u>1,200</u>	<u>650</u>
<i>Capital and reserves</i>			
Called-up share capital (all ordinary shares of £1 each)	5,500	1,000	500
Profit and loss	<u>1,000</u>	<u>200</u>	<u>150</u>
	<u>6,500</u>	<u>1,200</u>	<u>650</u>

#### Additional information:

- 1 Pagg acquired its shareholding in Ragg Ltd on 1 April 20X5. Ragg's profit and loss account balance at that time was £600,000.
- 2 The shares in Tagg Ltd were acquired on 1 April 20X9 when Tagg's profit and loss account balance was £100,000.
- 3 All goodwill arising on consolidation is amortised in equal amounts over a period of 20 years commencing from the date of acquisition of each subsidiary company.

- 4 At 31 March 20X0, Ragg had in stock goods purchased from Tagg at a cost to Ragg of £60,000. These goods had been invoiced by Tagg at cost plus 20 per cent. Minority interests are not charged with any intercompany profit.
- 5 Intercompany debts at 31 March 20X0 were as follows: Pagg owed Ragg £200,000 and Ragg owed Tagg £35,000.

**Required:**

In so far as the information permits, prepare the Pagg group of companies' consolidated balance sheet as at 31 March 20X0 in accordance with the Companies Acts and standard accounting practice.

*Note:* Formal notes to the accounts are NOT required, although detailed working must be submitted with your answer.

(Association of Chartered Certified Accountants)

**19.7A** You are presented with the following summarised information relating to Block plc for the year to 30 September 20X8:

	<i>Block plc</i> £000	<i>Chip Ltd</i> £000	<i>Knot Ltd</i> £000
Fixed assets	8,900	3,240	2,280
<i>Investments</i>			
Shares in group companies:			
Chip Ltd	2,500	—	—
Knot Ltd	1,600	—	—
	<u>4,100</u>	<u>—</u>	<u>—</u>
<i>Current assets</i>			
Stocks	300	160	80
Trade debtors	1,600	130	50
Cash at bank and in hand	400	110	120
	<u>2,300</u>	<u>400</u>	<u>250</u>
<i>Creditors: amounts falling due within one year</i>			
Trade creditors	( 200)	( 90)	( 110)
Proposed dividend	( 100)	( 50)	( 20)
	<u>( 300)</u>	<u>( 140)</u>	<u>( 130)</u>
	<u>15,000</u>	<u>3,500</u>	<u>2,400</u>
<i>Capital and reserves</i>			
Called-up share capital (ordinary shares of £1 each)	10,000	3,000	2,000
Profit and loss	5,000	500	400
	<u>15,000</u>	<u>3,500</u>	<u>2,400</u>

**Additional information:**

- Block purchased 80 per cent of the share capital of Chip on 1 October 20X3 when Chip's profit and loss account balance was £200,000 credit.
- On 1 October 20X7 Block purchased 60 per cent of the share capital of Knot. Knot's profit and loss account balance at that date was £500,000 credit.
- Goodwill is not amortised.
- During the year to 30 September 20X8, Block sold goods costing £200,000 to Chip for £300,000. Half of these goods remained in stock at the year end.
- Intercompany debts at the year end were as follows:

	£000
Chip owed Block	20
Knot owed Chip	30

**Required:**

Prepare the Block plc group of companies' consolidated balance sheet as at 30 September 20X8. Formal notes to the accounts are NOT required, although detailed working should be submitted with your answer.

(Association of Chartered Certified Accountants)





# Consolidated financial statements: acquisition of shares in subsidiaries at different dates

## Learning objectives

After you have studied this chapter, you should be able to:

- calculate goodwill when an interest in a subsidiary undertaking was acquired in blocks over a period of time
- calculate goodwill when a subsidiary undertaking was acquired part-way through its accounting period

## Introduction

In this chapter, you'll learn how to deal with piecemeal acquisitions, i.e. those situations where a subsidiary is acquired through a series of transactions. You will also learn how to calculate goodwill and pre-acquisition profits when a subsidiary is acquired part-way through its accounting period. In order to focus on the principles involved, we will use the threshold of ownership of over 50 per cent of the share capital acquired to determine when the acquired company becomes a subsidiary.

### 20.1 Shares bought at different dates

Up to this point, the shares in subsidiaries have all been bought at one point in time for each company. However, it is a simple fact that shares are often bought in blocks at different times, and that the first purchase may not give the buyer a controlling interest.

There used to be two possible methods of calculating pre-acquisition profits, and therefore goodwill. However, FRS 2 states that only one method should be used, and this is the method used in this book. FRS 2 requires that the consolidation be based on the fair values at the date the undertaking actually becomes a subsidiary, even though the acquisition has been made in stages.

#### Activity 20.1

Why do you think you are not allowed to calculate goodwill at each stage of acquisition?

Let's look at an example of piecemeal acquisitions.

A company, S, has an issued share capital of 100 ordinary shares of £1 each. The only reserve of S is the balance on the profit and loss account which was £50 on 31 December 20X4, and two years later on 31 December 20X6, it was £80. P buys 20 shares on 31 December 20X4 for £36, and a further 40 shares on 31 December 20X6 for £79. The date that S became a subsidiary was therefore 31 December 20X6. The calculation of goodwill becomes:

	£	£
Paid 31.12.20X4	36	
Paid 31.12.20X6	<u>79</u>	
		115
Shares bought (20 + 40)	60	
Profit and loss account of subsidiary	<u>48</u>	
		(108)
Goodwill		<u><u>7</u></u>

## 20.2 Shares bought during an accounting period

In addition, it has been conveniently assumed so far that all shares have been bought exactly on the last day of an accounting period. In reality, this is seldom the case. Most shares are bought part-way through an accounting period. Unless specially audited financial statements are drawn up as at the date of acquisition there is no up-to-date profit and loss account as at the date of acquisition and, therefore, the balance on the profit and loss account on that date is not known. As this balance is needed for the calculation of goodwill, some other method must be used to obtain it.

The approach adopted is that the profit and loss balance according to the last balance sheet before the acquisition of the shares is taken, and an addition made (or deduction, if a loss) corresponding to the proportion of the year's profits that had been earned before acquisition took place. This is then taken as the figure of pre-acquisition profits for goodwill and capital reserve calculations.

Let's look at an example.

### Exhibit 20.1

**Calculation of pre-acquisition profits, and goodwill, where the shares are bought part-way through an accounting period.**

P bought 20 of the 30 issued ordinary shares of S for £49 on 30 September 20X5. The financial statements for S are drawn up annually to 31 December. The balance sheet of S as at 31 December 20X4 showed a balance on the profit and loss account of £24. The profit and loss account of S for the year ended 31 December 20X5 disclosed a profit of £12.

	£	£
Shares bought		20
Profit and loss account:		
Balance at 31.12.20X4	24	
Add Proportion of 20X5 profits before acquisition $\frac{9}{12} \times £12$	<u>9</u>	
	<u>33</u>	
Proportion of pre-acquisition profits		
20 shares owned out of 30, $\frac{2}{3} \times £33$		<u>22</u>
		<u>42</u>
Paid for shares £49		
Therefore goodwill is £49 – £42 = £7		

## Learning outcomes

You should now have learnt:

- 1 When an interest in a subsidiary undertaking is acquired in blocks over a period of time, goodwill is calculated as if all the blocks had been purchased at the date when control was achieved.
- 2 When a subsidiary undertaking is acquired part-way through its accounting period, in the absence of specially audited financial statements, the proportion of profit (or loss) applicable to that part of the financial period that preceded the acquisition date should be treated as being part of the pre-acquisition reserves for the calculation of goodwill upon consolidation.

## Answer to activity

- 20.1** The subsidiary was actually acquired only when control passed to the parent company. As goodwill is to be calculated when that happens, it would be inappropriate to calculate parts of it at an earlier date.

## Review questions

**20.1** On 31 March 20X3, Subs Ltd had issued share capital of 50,000 ordinary £1 shares and reserves of £30,000. Two years later, the reserves had risen to £45,000 but the share capital was unchanged. Parent Undertaking Ltd purchased shares in Subs Ltd: (i) 12,500 shares on 31 March 20X3 for £32,000 and (ii) 18,000 shares on 31 March 20X5 for £29,000. Calculate the figure for goodwill that will appear in the consolidated balance sheet as at 31 March 20X5.

**20.2A** On 31 October 20X4, its balance sheet date, Sons and Daughters Ltd had issued share capital of 600,000 ordinary £1 shares and reserves of £340,000. Four years later, the share capital is unchanged but the reserves have risen to £420,000. Pai Ltd purchased 150,000 shares in Sons and Daughters Ltd on 31 October 20X4 for £260,000. On 31 October 20X8, it paid £650,000 for another 300,000 shares. Calculate the goodwill to be shown in the consolidated balance sheet as at 31 October 20X8.

**20.3** Pop and Mom Ltd bought 120,000 of the 200,000 issued ordinary £1 shares of Sonny Ltd for £300,000 on 31 July 20X4. Sonny Ltd financial statements are drawn up annually to 31 December. The balance sheet of Sonny Ltd on 31 December 20X3 showed a balance on the profit and loss account of £62,000. The profit and loss account of Sonny Ltd for the year ended 31 December 20X4 showed a profit of £69,000. No other reserves appear in either balance sheet. Calculate the figure for the goodwill to be shown in the consolidated balance sheet as at 31 December 20X4.

**20.4A** On 1 January 20X8, Sons and Co Ltd had an issued share capital of 200,000 ordinary £1 shares. The balance on the profit and loss account was £20,000 and there was also a general reserve of £16,000. During the year ended 31 December 20X8, Sons and Co Ltd made a profit of £24,000, none of which was distributed. Pop Ltd bought 175,000 shares on 1 April 20X8 for £240,000. Calculate the figure of goodwill to be shown in the consolidated balance sheet as at 31 December 20X8.

# Intra-group dividends

## Learning objectives

After you have studied this chapter, you should be able to:

- explain how to treat intra-group dividends
- explain how to treat dividends from a newly acquired subsidiary undertaking that were proposed prior to the acquisition date
- explain how to treat dividends proposed by subsidiary undertakings at the balance sheet date

## Introduction

In this chapter, you'll learn how to treat dividends that have been received from a subsidiary and dividends that have been proposed by a subsidiary but not received at the end of the accounting period. You'll learn how to deal with dividends paid by a subsidiary out of pre-acquisition profits as compared with dividends paid by a subsidiary out of post-acquisition profits. You will also learn how to treat dividends proposed by a subsidiary at the acquisition date. Finally, you will learn how to treat dividends paid and proposed by non-wholly-owned subsidiaries.

### 21.1 Dividends paid from post-acquisition profits

Intra-group dividends are dividends paid by one member of a group to another, i.e. from one company in the group to another in the same group. They will, therefore, be shown in the receiving company's profit and loss account as investment income, with a subsequent increase in the bank balance. From the point of view of the paying company's financial statements, the dividend will appear as a charge against its profit and loss account, thus reducing the final balance on that account. Also, when paid, there will be a reduction in the bank balance of that company.

If the dividend has been proposed, but not paid by the end of the accounting period, the proposed dividend will be shown as a current liability in the subsidiary's balance sheet, and as a current asset in the parent undertaking's balance sheet (as a dividend owing from the subsidiary).

From the point of view of the consolidated balance sheet, if the dividend is paid entirely from post-acquisition profits, no action is needed. The two aspects of the dividend (current liability in the subsidiary's balance sheet and a current asset in the parent company's balance sheet) automatically cancel each other out when drafting the consolidated balance sheet.

#### Activity 21.1

What would be the impact upon the consolidated financial statements if the dividend had been paid before the end of the subsidiary's accounting period?

## 21.2 Dividends paid from pre-acquisition profits

In Chapter 18, you learnt of the company law principle that dividends should not be paid out of capital. To prevent this happening, any pre-acquisition profits are capitalised and brought into the goodwill calculation. A company cannot circumvent the principle by buying the shares of a company, part of the purchase price being for the reserves of the subsidiary, and then utilising those reserves by paying itself dividends, and consequently adding those dividends to its own profits and then declaring an increased dividend itself. The next two exhibits illustrate this. The first is an example of dividends paid from post-acquisition profits. The second shows what occurs when dividends are paid from pre-acquisition profits.

### Exhibit 21.1

#### *Dividends paid from post-acquisition profits.*

P buys 100 per cent of the shares of S on 31 December 20X4. In 20X5, S pays a dividend of 50 per cent to P. To simplify matters, the dividend is declared for 20X5 and paid in 20X5.

#### P Balance Sheet as at 31 December 20X4

	£
Investment in subsidiary:	
10 shares bought 31.12.20X4	23
Stock	3
Bank	1
	<u>27</u>
Share capital	20
Profit and loss account	7
	<u>27</u>

#### S Balance Sheet as at 31 December 20X4

	£
Stock	16
Bank	6
	<u>22</u>
Share capital	10
Profit and loss account	12
	<u>22</u>

#### Consolidated Balance Sheet as at 31 December 20X4 (immediately after acquisition)

	£
Goodwill (P £23 – S £10 – S £12)	1
Stock	19
Bank (P £1 + S £6)	7
	<u>27</u>
Share capital	20
Profit and loss account	7
	<u>27</u>

This consolidated balance sheet was drafted immediately after acquisition of S by P. The following balance sheets show the position one year later. Remember, the calculation of goodwill does not alter.

One year later, the balance sheets are as follows:

**P Balance Sheet as at 31 December 20X5**

	£	£
Investment in subsidiary:		
10 shares bought 31.12.20X4		23
Stock		11
Bank		<u>1</u>
		<u>35</u>
Share capital		20
Profit and loss account:		
As at 31.12.20X4	7	
Add Profit for 20X5 (including dividend of £5 from S)	<u>8</u>	
		<u>15</u>
		<u>35</u>

**S Balance Sheet as at 31 December 20X5**

	£	£	£
Stock			19
Bank			<u>7</u>
			<u>26</u>
Share capital			10
Profit and loss account:			
As at 31.12.20X4		12	
Profit for 20X5	9		
Less Dividend paid (to P)	<u>(5)</u>		
		<u>4</u>	
			<u>16</u>
			<u>26</u>

The dividend of £5 has been paid out of profits made since the acquisition by P. The dividend can, therefore, be treated as being from post-acquisition profits and can, therefore, be shown in the profit and loss account of P as investment income so increasing the profits of P available for dividend purposes.

**Consolidated Balance Sheet as at 31 December 20X5**

	£
Goodwill (£23 – £10 – £12)	1
Stock (P £11 + S £19)	30
Bank (P £1 + S £7)	<u>8</u>
	<u>39</u>
Share capital	20
Profit and loss account:	
(P £7 + £8 + S £4)	<u>19</u>
	<u>39</u>

**Exhibit 21.2*****Dividends paid from pre-acquisition profits.***

Once again, P buys 100 per cent of the shares of S on 31 December 20X4 and S pays a dividend for 20X5 of 50 per cent to P during 20X5. However, in this case, S makes neither a profit nor a loss in 20X5.

The balance sheets at 31 December 20X4 are obviously the same as in Exhibit 21.1. However, the balance sheets a year later are now:

**P Balance Sheet as at 31 December 20X5**

	£	£
Investment in subsidiary:		
(£23 originally calculated less dividend from pre-acquisition profits £5)		18
Stock		11
Bank		<u>1</u>
		<u>30</u>
Share capital		20
Profit and loss account:		
As at 31.12.20X4	7	
Add Profit for 20X5 (does not include the dividend from S)	<u>3</u>	
		<u>10</u>
		<u>30</u>

**S Balance Sheet as at 31 December 20X5**

	£	£
Stock		15
Bank		<u>2</u>
		<u>17</u>
Share capital		10
Profit and loss account:		
As at 31.12.20X4	12	
Add Profit for 20X5*	0	
Less Dividend paid (to P)	<u>( 5)</u>	
		<u>7</u>
		<u>17</u>

**\*For simplicity, the profit of S for 20X5 is taken as being exactly nil.**

**Consolidated Balance Sheet as at 31 December 20X5**

	£
Goodwill	1
Stock	26
Bank	<u>3</u>
	<u>30</u>
Share capital	20
Profit and loss	<u>10</u>
	<u>30</u>

**When a dividend is paid by a subsidiary out of pre-acquisition profits it is, in fact, a return of capital to the parent company.** Accordingly, the dividend is deducted from the original cost of the investment – it is a return of the purchase money – rather than being treated as investment income of the holding company.

As examiners are always trying to identify the better candidates and award them marks to match their abilities, a common 'trick' used by some examiners is to treat the receipt as investment income instead of a refund of capital. Thus, the balance sheet of P as at 31 December 20X5 in this exhibit would have read 'Profit and loss account £15' instead of 'Profit and loss account £10', and the investment would be shown at £23 instead of £18. The examiner really wants the candidate to demonstrate an awareness of the error in the balance sheet by adjusting it to show the correct amounts before proceeding with the consolidation of the balance sheets of P and S.

### 21.3 Dividends proposed at date of acquisition of shares

Sometimes, when a company is acquired, it has already proposed but not yet paid a dividend. As a result, the new parent will receive the dividend even though it was proposed to be paid from profits earned before acquisition took place. The action taken is similar to that in Exhibit 21.2, in that the dividend received is deducted from the price paid for the shares so that the net effective price paid may be calculated.

#### Exhibit 21.3

*Shares acquired in a subsidiary at a date when the acquired company has declared a proposed dividend which has not yet been paid.*

##### Parent Balance Sheet as at 31 December 20X3

	£	£
Investment in subsidiary:		
10 shares bought 31.12.20X2	24	
Less Dividend from pre-acquisition profits	( 6 )	
		18
Stock		9
Bank		<u>2</u>
		<u>29</u>
Share capital		20
Profit and loss account:		
As at 31.12.20X2	4	
Profit for 20X3	<u>5</u>	
		<u>9</u>
		<u>29</u>

##### Subsidiary Balance Sheet as at 31 December 20X3

	£	£
Stock		19
Bank		<u>4</u>
		<u>23</u>
Share capital		10
Profit and loss account:		
As at 31.12.20X2 (after deducting the proposed dividend £6)	5	
Add Profit for 20X3	<u>8</u>	
		<u>13</u>
		<u>23</u>







## Consolidated Balance Sheet as at 31 December 20X3

	£	£
Goodwill*		3
Stock		28
Bank		<u>6</u>
		<u>37</u>
Share capital		20
Profit and loss account: (P £9 + S £8)		<u>17</u>
		<u>37</u>
*Note:		
Calculation of goodwill	£	£
Paid		24
Less Shares taken over	10	
Less Profit and loss balance at 31.12.20X2	5	
Less Dividend paid from pre-acquisition profits	<u>6</u>	
		(21)
Goodwill		<u>3</u>

## 21.4 Proposed dividends and minority interests

In the past, when a dividend was proposed by a company it was shown as a current liability on its balance sheet. As mentioned earlier in Section 21.1, this was just as true for a subsidiary as it would have been for a company which was not part of a group. The parent undertaking showed the proposed dividend from the subsidiary as being receivable in the same accounting period as that in which the subsidiary showed it as being payable. Thus, when the subsidiary's balance sheet showed the proposed dividend as a current liability, the parent undertaking's balance sheet showed it as a current asset. As this is another form of intra-group indebtedness, the amounts owing must be cancelled out when drawing up the consolidated balance sheet. Where the subsidiary is owned 100 per cent by the parent, the two items will cancel out fully.

However, when the subsidiary is only part-owned, there is the question of the minority interest. The cancellation is based upon the amount of the proposed dividend showing as a debtor amount in the parent undertaking's balance sheet. The remainder of the proposed dividend of the subsidiary represents the amount of dividend owing to the minority shareholders. This can be dealt with in two ways, either of which is permitted in the UK:

- 1 The part of the proposed dividend due to the minority shareholders is added back to the minority interest figure in the consolidated balance sheet.
- 2 The part of the proposed dividend due to the minority shareholders is shown as a current liability in the consolidated balance sheet.

### Activity 21.2

Which of these two methods do you think is the more appropriate?

It must be borne in mind that nothing that has been said refers in any way to the proposed dividends of the parent. These are shown in their entirety as a current liability in the consolidated balance sheet.

Let's look at an example of method (2), above:

**Exhibit 21.4**

*Where a subsidiary has proposed a dividend post-acquisition, and there is a minority interest share in the subsidiary.*

**Parent X Balance Sheet as at 31 December 20X3**

	£	£
Investment in subsidiary: 6 shares bought 31.12.20X1		17
Stock	19	
Proposed dividend receivable from Subsidiary	3	
Bank	<u>1</u>	
	23	
Less: Proposed dividend (of Parent X)	(9)	
		<u>14</u>
		<u>31</u>
Share capital		20
Profit and loss		<u>11</u>
		<u>31</u>

**Subsidiary Y Balance Sheet as at 31 December 20X3**

	£	£
Stock		23
Bank		<u>7</u>
		30
Less: Proposed dividend		(5)
		<u>25</u>
Share capital		10
Profit and loss*	20	
Less Proposed dividend	(5)	
		<u>15</u>
		<u>25</u>

*\*At the date of acquisition of the shares on 31 December 20X1 the profit and loss account balance of Subsidiary Y was £10, and there were no proposed dividends at that date. The proposed dividend has already been deducted from Subsidiary Y's profit and loss account and is shown as a creditor in its balance sheet.*

**Consolidated Balance Sheet as at 31 December 20X3**

	£	£
Goodwill <sup>(Note 1)</sup>		5
Stock		42
Bank		<u>8</u>
		55
Less: <i>Current liabilities</i>		
Proposed dividends of parent	9	
Owing to minority interest	<u>2</u>	
		(11)
		<u>44</u>
Share capital		20
Profit and loss <sup>(Note 2)</sup>		14
Minority interest		
Shares	4	
Profit and loss <sup>2/5</sup>	<u>6</u>	
		<u>10</u>
		<u>44</u>



**Notes:**

	£	£	£
(1) Goodwill:			
Paid			17
Less Shares bought		6	
Pre-acquisition profits $\frac{3}{5}$ of £10		<u>6</u>	(12)
			<u>5</u>
(2) Profit and loss:			
P's profit and loss balance			11
S's profit and loss balance		15	
Less Owned by minority interest: $\frac{2}{5}$ of £15	6		
Less Pre-acquisition profits at 31.12.20X1 bought by parent: $\frac{3}{5}$ of £10	6		
		(12)	
			<u>3</u>
			<u>14</u>

If method (1) had been used, the consolidated balance sheet would be as shown except for Minority interest and Current liabilities. These would have appeared:

	£	£
<i>Current liabilities</i>		
Proposed dividend		9
:		
<i>Minority interest</i>		
Shares	4	
Profit and loss	<u>8</u>	
		12

## Learning outcomes

You should now have learnt:

- 1 Intra-group dividends paid out of post-acquisition reserves will not appear in the consolidated financial statements, the entries in the individual company financial statements cancelling out upon consolidation.
- 2 Dividends from a newly acquired subsidiary that were declared prior to the date of acquisition are treated as repayment of capital and the investment in the subsidiary in the parent company balance sheet is reduced by the amount received.
- 3 Where a subsidiary undertaking is 100 per cent owned, dividends proposed by the subsidiary undertaking that are unpaid at the balance sheet date will be cancelled out upon consolidation.
- 4 Where a subsidiary undertaking is not 100 per cent owned, dividends proposed by the subsidiary undertaking that are unpaid at the balance sheet date will be cancelled out upon consolidation to the extent that ownership is held; the remainder of the dividend (that relates to the minority interest in the subsidiary undertaking) is shown as either an addition to the minority interest figure in the consolidated balance sheet, or as a current liability in the consolidated balance sheet.

## Answers to activities

- 21.1** If the dividend has been paid, so far as the balance sheets are concerned, the bank balance of the subsidiary has decreased while the bank balance of the parent has increased. The profit and loss account reserve of the subsidiary has been reduced while the profit and loss account reserve of the parent has risen. These all offset each other and have no impact upon the consolidated financial statements.
- 21.2** Method (2) would seem to be the better method. It gives a more complete view of the position. For instance, when considering the working capital or liquidity of the group it is essential that all current liabilities due to external parties should be brought into the calculation. If the proposed dividend soon to be paid to persons outside the group were excluded, this could render the calculations completely invalid.

## Review questions

**Note:** Unless otherwise indicated, the share capital of all the companies in these review questions comprises of ordinary £1 shares.

**21.1** The following balance sheets were drawn up as at 31 March 20X5. The person drafting the balance sheet of Parent Ltd was not too sure of an item and has shown it as a suspense amount.

### Parent Ltd Balance Sheet as at 31 March 20X5

	£	£
Investment in subsidiary:		
50,000 shares bought 31.3.20X4		68,000
Fixed assets		70,000
Current assets		<u>9,000</u>
		<u>147,000</u>
Share capital		100,000
Profit and loss:		
As at 31.3.20X4	15,000	
Add Profit for 20X5	<u>24,000</u>	
		39,000
Suspense*		<u>8,000</u>
		<u>147,000</u>

\*The suspense item consists of the 20X4 dividend received late from Subsidiary Ltd

### Subsidiary Ltd Balance Sheet as at 31 March 20X5

	£	£
Fixed assets		36,000
Current assets		<u>30,000</u>
		<u>66,000</u>
Share capital		50,000
Profit and loss:		
As at 31.3.20X4*	7,000	
Add Profit for 20X5	<u>9,000</u>	
		16,000
		<u>66,000</u>

\*The balance of £7,000 is after deducting the dividend for 20X4 of £8,000.



**Required:**

Draw up the consolidated balance sheet as at 31 March 20X5.

**21.2A** The following balance sheets of Pop Ltd and Son Ltd were drawn up as at 31 December 20X7. Draw up the consolidated balance sheet as at that date.

**Pop Ltd Balance Sheet as at 31 December 20X7**

	£	£
Investment in subsidiary:		
80,000 shares bought 31.12.20X6		160,000
Fixed assets		200,000
Current assets		<u>60,000</u>
		<u>420,000</u>
Share capital		300,000
Profit and loss:		
As at 31.12.20X6	74,000	
Add Profit for 20X7*	<u>46,000</u>	
		<u>120,000</u>
		<u>420,000</u>

\*The profit figure for 20X7 includes the dividend of £25,000 received from Son Ltd for the year 20X6.

**Son Ltd Balance Sheet as at 31 December 20X7**

	£	£
Fixed assets		79,000
Current assets		<u>47,000</u>
		<u>126,000</u>
Share capital		80,000
Profit and loss:		
As at 31.12.20X6*	16,000	
Add Profit for 20X7	<u>30,000</u>	
		<u>46,000</u>
		<u>126,000</u>

\*The balance of £16,000 is after deducting the proposed dividend for 20X6 £25,000.

**21.3** Draw up a consolidated balance sheet as at 31 October 20X3 from the following information.

**Pa and Ma Ltd Balance Sheet as at 31 October 20X3**

	£	£
Investment in subsidiary: 42,000 shares bought 31.10.20X2		70,000
Fixed assets		60,000
Current assets		<u>18,000</u>
		<u>148,000</u>
Share capital		100,000
Profit and loss:		
As at 31.10.20X2	35,000	
Add Profit for 20X3	<u>13,000</u>	
		<u>48,000</u>
		<u>148,000</u>

**Son and Daughter Ltd Balance Sheet as at 31 October 20X3**

	£	£
Fixed assets		42,000
Current assets		<u>36,000</u>
		<u>78,000</u>
Share capital		60,000
Profit and loss:		
As at 31.10.20X2	7,000	
Add Profit for 20X3	<u>20,000</u>	
	27,000	
	( 9,000)	
Less Dividend paid 20X3		<u>18,000</u>
		<u>78,000</u>

Note: The proposed dividend of Son and Daughter has not yet been brought into the financial statements of Pa and Ma Ltd.

**21.4A** The balance sheets of Pops Ltd and Sons Ltd are as follows:**Pops Ltd Balance Sheet as at 31 December 20X8**

	£	£
Investment in subsidiary: 195,000 shares bought 31.12.20X7		380,000
Fixed assets		240,000
Current assets		<u>92,000</u>
		<u>712,000</u>
Share capital		600,000
Profit and loss:		
As at 31.12.20X7	72,000	
Add Profit for 20X8	<u>40,000</u>	
		112,000
		<u>712,000</u>

**Sons Ltd Balance Sheet as at 31 December 20X8**

	£	£
Fixed assets		270,000
Current assets	120,000	
Less Current liabilities	( 50,000)	
		<u>70,000</u>
		<u>340,000</u>
Share capital		300,000
Profit and loss:		
As at 31.12.20X7	62,000	
Less Loss for 20X8	( 22,000)	
		40,000
		<u>340,000</u>





## 21.5 The following are the summarised balance sheets of P Ltd and S Ltd at 31 December 20X6.

	<i>P Limited</i>		<i>S Limited</i>	
	£	£	£	£
Tangible fixed assets (see Note (a))		320,000		360,000
Loan to S Ltd		50,000		
Investment in S Ltd		250,000		
<i>Current assets</i>				
Stocks	110,000		50,000	
Debtors	100,000		40,000	
Bank	<u>30,000</u>		<u>10,000</u>	
		240,000		100,000
<i>Creditors: amounts falling due within one year</i>				
Trade creditors	190,000		22,000	
Proposed preference dividend	<u>—</u>		<u>8,000</u>	
		(190,000)		( 30,000)
Total assets <i>less</i> current liabilities		670,000		430,000
Less Long-term liability – Loan from P Ltd		<u>—</u>		( 50,000)
		<u>670,000</u>		<u>380,000</u>
<i>Capital and reserves:</i>				
Ordinary shares of £1 each, fully paid		500,000		200,000
8% preference shares of £1 each, fully paid		—		100,000
Reserves		<u>170,000</u>		<u>80,000</u>
		<u>670,000</u>		<u>380,000</u>

### Notes:

#### (a) *Tangible fixed assets*

##### P Limited

	<i>Cost</i>	<i>Cumulative depreciation</i>	<i>WDV</i>
	£	£	£
Buildings	120,000	10,000	110,000
Plant and machinery	200,000	40,000	160,000
Motor vehicles	<u>80,000</u>	<u>30,000</u>	<u>50,000</u>
	<u>400,000</u>	<u>80,000</u>	<u>320,000</u>

##### *Tangible fixed assets*

##### S Limited

	<i>Cost</i>	<i>Cumulative depreciation</i>	<i>WDV</i>
	£	£	£
Buildings	300,000	100,000	200,000
Plant and machinery	120,000	30,000	90,000
Motor vehicles	<u>130,000</u>	<u>60,000</u>	<u>70,000</u>
	<u>550,000</u>	<u>190,000</u>	<u>360,000</u>

There were no additions or disposals of fixed assets by the group during the year.

- (b) P Limited acquired its holding on 1 January 20X6, when the balance on S Limited's reserves stood at £50,000. The investment consists of 150,000 ordinary shares of £1 each, fully paid, purchased for £250,000.
- (c) P Limited credited to its profit and loss account a dividend of £7,500 from S Limited in March 20X6, in respect of the shares acquired on 1 January 20X6. S Limited does not intend to pay an ordinary dividend for the year ended 31 December 20X6.

### Required:

Prepare a consolidated balance sheet for P Limited and its subsidiary S Limited at 31 December 20X6.

Note: Ignore taxation.

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**21.6** X plc acquired 80 per cent of the ordinary share capital of Y plc on 1 January 20X6 for £300,000.

The lists of balances of the two companies at 31 December 20X6 were as follows:

	<i>X plc</i> £000	<i>Y plc</i> £000
Called-up share capital:		
400,000 ordinary shares of £1 each, fully paid	400	
300,000 ordinary shares of £0.50 each, fully paid		150
Reserves as at 1 January 20X6	220	90
Retained profits for 20X6	20	18
Trade creditors	130	80
Taxation	30	14
Proposed final dividend	20	10
Depreciation provisions:		
Freehold property	12	6
Plant and machinery	40	12
Current account		14
	<u>872</u>	<u>394</u>
Tangible fixed assets:		
Freehold property, at cost	120	160
Plant and machinery, at cost	183	62
Investment in Y plc	300	
Stocks	80	70
Debtors	160	90
Bank	10	12
Current account	19	
	<u>872</u>	<u>394</u>

**Notes:**

- (a) A remittance of £2,000 from Y plc to X plc in December 20X6 was not received by X plc until January 20X7.
- (b) Goods, with an invoice value of £3,000, were despatched by X plc in December 20X6 but not received by Y plc until January 20X7. The profit element included in this amount was £400.
- (c) Included in the stock of Y plc at 31 December 20X6 were goods purchased from X plc for £10,000. The profit element included in this amount was £2,000.
- (d) It is group policy to exclude all profit on any intra-company transactions.
- (e) No interim dividend was paid in 20X6 by either company.
- (f) Goodwill is not amortised.

**Required:**

Prepare a consolidated balance sheet for X plc and its subsidiary Y plc as at 31 December 20X6.

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**21.7A** P plc acquired 80 per cent of the ordinary share capital of S plc for £150,000 and 50 per cent of the issued 10 per cent cumulative preference shares for £10,000, both purchases being effected on 1 May 20X7. There have been no changes in the issued share capital of S plc since that date. The following balances are taken from the books of the two companies at 30 April 20X8:

	<i>P plc</i> £000	<i>S plc</i> £000
Ordinary share capital (£1 shares)	300	100
10% cumulative preference shares (50p shares)	–	20
Share premium account	20	10
General reserve	68	15
Profit and loss account	50	35
Trade creditors	35	22
Taxation	50	30
Proposed dividends	15	10
Depreciation		
Freehold property	40	15
Plant and machinery	100	48
	<u>678</u>	<u>305</u>
Freehold property at cost	86	55
Plant and machinery at cost	272	168
Investment in S plc	160	–
Stocks	111	65
Debtors	30	15
Cash	19	2
	<u>678</u>	<u>305</u>

The following additional information is available:

- Stocks of P plc include goods purchased from S plc for £20,000. S plc charged out these stocks at cost plus 25 per cent.
- Proposed dividend of S plc includes a full year's preference dividend. No interim dividends were paid during the year by either company.
- Creditors of P plc include £6,000 payable to S plc in respect of stock purchases. Debtors of S plc include £10,000 due from P plc. The holding company sent a cheque for £4,000 to its subsidiary on 29 April 20X8 which was not received by S plc until May 20X8.
- At 1 May 20X7 the balances on the reserves of S plc were as follows:

	£000
Share premium	10
General reserve	20
Profit and loss account	30

- Goodwill is not amortised.

**Required:**

- Prepare a consolidated balance sheet for P plc and its subsidiary S plc at 30 April 20X8. Notes to the accounts are not required. Workings must be shown.
- Explain what is meant by the term 'cost of control' and justify your treatment of this item in the above accounts.

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You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Consolidated balance sheets: sundry matters

## Learning objectives

After you have studied this chapter, you should be able to:

- calculate goodwill on the purchase of preference shares
- treat unrealised profits and losses on intra-group asset sales
- describe the effect of 'fair value' on the calculation of goodwill and on the preparation of the consolidated financial statements

## Introduction

In this chapter, you'll learn how to calculate goodwill on preference shares and how to treat it in the consolidated financial statements. You'll also learn what to do with profits and losses on the sale of fixed assets between companies in the same group. Finally, you will learn more about what is meant by 'fair value' and how to calculate and incorporate it into consolidated financial statements.

### 22.1 Preference shares

You've already learnt that preference shares do not carry voting powers under normal conditions, nor do they possess a right to the reserves of the company. Contrast this with ordinary shares which, when bought by a parent undertaking, will give it voting rights and also a proportionate share of the reserves of the company.

The absence of any right to a share of the reserves for preference shareholders combined with the absence of voting rights for holders of preference shares means that preference shareholders cannot control a company, either by their holding a majority of the voting share capital (even if share capital comprised 10 preference shares and 2 ordinary shares) or (as a result of their preference shareholding) being in a position to exert significant influence on the decision making of the company. As a result, the calculation of goodwill on the purchase of preference shares is very simple indeed.

If 9 preference shares of £1 each are bought for £12 then goodwill will be £3 while, if 20 preference shares of £1 each are bought for £16, the negative goodwill will be £4. The amount of goodwill on the purchase of preference shares is not shown separately from that calculated on the purchase of ordinary shares. Instead the figures will be amalgamated to throw up one figure only on the consolidated balance sheet. (Note the use of the nominal value of the preference shares when calculating goodwill.)

Preference shares owned by minority shareholders are simply shown as part of the minority interest figure in the consolidated balance sheet, each share being shown at nominal value.

## 22.2 Sale of fixed assets between members of the group

There is obviously nothing illegal in one company in a group selling some of its fixed assets to another company in the group. If the sale is at the original price paid for the fixed assets by the first company, then no adjustment will be needed in the consolidated balance sheet. However, such sales are usually at a price which differs from their original cost. Any intra-group unrealised profit or loss arising in this way must be eliminated in a similar fashion to that taken for the unrealised profit in trading stock as described in Chapter 19.

Not surprisingly, if a fixed asset is to be shown at its cost to the group in the consolidated balance sheet rather than at the cost paid by one group company to another, the depreciation figure on that fixed asset must be adjusted to that based on the original cost of the fixed asset to the group, rather than on the amount paid by the group company that now owns it.

Let's look at an example.

### Exhibit 22.1

#### Parent and Co Ltd Balance Sheet as at 31 December 20X6

	£	£
Investment in S:		
50 shares bought 31.12.20X5		95
Fixed assets	78	
Less Depreciation	(23)	
		55
Current assets		20
		<u>170</u>
Share capital		100
Profit and loss:		
As at 31.12.20X5	30	
For the year 20X6	40	
		70
		<u>170</u>

#### Subsidiary and Co Ltd Balance Sheet as at 31 December 20X6

	£	£
Fixed assets	80	
Less Depreciation	(20)	
		60
Current assets		35
		<u>95</u>
Share capital		50
Profit and loss:		
As at 31.12.20X5	20	
For the year 20X6	25	
		45
		<u>95</u>

During the year, Parent and Co Ltd had sold to Subsidiary and Co Ltd for £28 a fixed asset which had cost it £20. Of the figure of £20 depreciation in the balance sheet of Subsidiary and Co Ltd, £7 refers to this asset and £13 to the other assets. The rate of depreciation is 25 per cent straight-line. The £8 profit is included in the figure of £40 profit for 20X6 in the balance sheet of Parent and Co Ltd.

Summarising all this:

- (a) Parent and Co Ltd sold a fixed asset to Subsidiary and Co Ltd for £28 which had cost £20.  
 (b) Entries made in Parent and Co Ltd's accounts:

Dr Bank	£28	
Cr Fixed assets		£20
Cr Profit and loss		8

- (c) Entries made in Subsidiary and Co Ltd's accounts:

Dr Fixed assets	£28	
Cr Bank		£28
Dr Profit and loss	£7	
Cr Depreciation (£28 × 25%)		£7

This means that the figure of £8 needs cancelling from the asset costs in the consolidated balance sheet and from the profit and loss account balance. In addition the figure of depreciation needs adjusting downwards, from the £7 as shown on the balance sheet of Subsidiary and Co Ltd, to the figure of £5, i.e. 25 per cent depreciation based on the cost of the asset to the group. This in turn means that the figure of profit for Subsidiary and Co Ltd, £25, needs increasing by £2, as, instead of the expense of £7 depreciation, there will now be a reduced expense of £5. The consolidated balance sheet becomes:

#### Consolidated Balance Sheet as at 31 December 20X6

	£	£
Goodwill		25
Fixed assets	150	
Less Depreciation	( 41)	
		109
Current assets		55
		<u>189</u>
Share capital		100
Profit and loss: (Parent and Co: £70 – £8 + Son and Co £25 + £2)		89
		<u>189</u>

## 22.3 Fair values in acquisition accounting

The consolidation process is looked at from the point of view that the parent undertaking acquires shares in a company, and thereby achieves control of that company. In addition, it is recognised that the reserves are also taken over.

The consolidated balance sheet should give a picture of the group that is not clouded by the consolidation method adopted.

An entity is acquired to obtain control of its assets. The consolidated balance sheet should give the same picture as that which would have been recorded if, instead of buying shares, the assets themselves had been bought.

When FRS 6: *Acquisitions and mergers* and FRS 7: *Fair values in acquisition accounting* were issued in 1994, the way in which acquisitions were accounted for in the UK was standardised. One of the areas of greatest diversity before they were issued concerned the revaluation of assets and liabilities to 'fair values'. 'Fair value' is defined as the amount for which an asset or liability could be exchanged in an arm's-length transaction (i.e. in an exchange between strangers).

Generally, acquiring companies set their own 'fair values' on the assets and liabilities acquired, and then follow the FRS 10 (*Goodwill and intangible assets*) rules that the amount

to be attributed to purchased goodwill should be the difference between the 'fair value' of the consideration given and the aggregate of the 'fair values' of the separable net assets acquired. This should apply to all the assets, including those attributable to minority interests.

Under acquisition accounting, the investment is shown at cost (which equals the 'fair value' given) in the parent company's own financial statements. On consolidation, if the fair value of the net assets (excluding goodwill) acquired is *less than* the fair value of the purchase consideration, FRS 10 requires that the difference is treated as goodwill and capitalised and, normally, amortised. If the fair value of the net assets (excluding goodwill) acquired *exceeds* the fair value of the purchase consideration, the difference is treated as negative goodwill. This is similar to the treatment that has been adopted throughout the previous few chapters, the only difference being that fair values should always be used, rather than the values as shown in the balance sheet of the acquired company.

FRS 7 requires that upon acquisition, all assets and liabilities that existed in the acquired entity at that date are recorded at fair values reflecting their condition at that date. In addition, it seeks to ensure that all changes to the acquired assets and liabilities and the resulting gains and losses *that arise after control of the acquired entity has passed to the acquirer*, are reported as part of the post-acquisition financial performance of the reporting group.

FRS 7 contains a number of rules governing the determination of appropriate fair values:

- 1 The fair value of *tangible fixed assets* should be based upon either *market value* (if assets similar in type and condition are bought and sold on an open market) or *depreciated replacement cost* (reflecting the acquired business's normal buying process and the sources of supply and purchase prices available to it). However, the fair value should not exceed the recoverable amount (i.e. the greater of the net realisable value and the value in use) of the asset.
- 2 The fair value of *intangible assets* should be based on their *replacement cost*, which is normally their estimated market value.
- 3 *Stocks*, including commodity stocks, that the acquired entity trades on a market in which it participates as both a buyer and seller should be valued at *current market prices*.
- 4 *Other stocks and work in progress* should be valued at the lower of *replacement cost* and *net realisable value*. As with the use of *depreciated replacement cost* for *tangible fixed assets*, *replacement cost* for stock should be the cost at which it would have been replaced by the acquired entity, reflecting the acquired business's normal buying process and the sources of supply and prices available to it. The standard suggests that this is synonymous with 'the current cost of bringing the stocks to their present location and condition'.
- 5 *Quoted investments* should be valued at *market price*.
- 6 *Monetary assets and liabilities*, including accruals and provisions, should take into account their timing and the amounts expected to be received and paid. The *fair value* should be determined by reference to *market prices*, or by discounting to present value.
- 7 *Contingencies* should be measured at *fair values* where these can be determined, using reasonable estimates of the expected outcome if necessary.

The 'cost of acquisition' is defined in FRS 7 as the amount of cash paid and the fair value of other purchase consideration given by the acquirer, together with the expenses of the acquisition.

The effect of the use of fair values can be seen from what would occur if fair values were used by the acquiring company in arriving at the price it wished to pay, but then were never incorporated into the financial statements. For instance, if P buys all the 10 £1 shares of S for £18 when the reserves are £5, then the goodwill calculation if fair values are not used is:

	£	£
Cost		18
Less Shares	10	
Less Reserves	<u>5</u>	
		(15)
Goodwill		<u>3</u>

However, P might have bought the shares of S because it thought that the fair value of the net assets of S was £17.

**Activity 22.1**

What would be wrong with P recording goodwill as £3 in this case?

The revaluation upwards of the fixed assets by £2, and the consequent reduction of the goodwill figure by £2 brings the figures into line with how P views them. Where there are depreciation charges on the revalued assets, they also need to be adjusted.

Let's look at an example of the amendments made when balance sheet values are adjusted to fair values.

**Exhibit 22.2**
**P Balance Sheet as at 31 December 20X6**

	£	£
Investment in subsidiary: 30 shares bought 31.12.20X5		56
Fixed assets	80	
Less Depreciation for the year	(16)	
		64
Current assets		<u>26</u>
		<u>146</u>
Share capital		100
Profit and loss account:		
As at 31.12.20X5	20	
Add Profit 20X6	<u>26</u>	
		<u>46</u>
		<u>146</u>

**S Balance Sheet as at 31 December 20X6**

	£	£
Fixed assets	50	
Less Depreciation for the year	(10)	
		40
Current assets		<u>14</u>
		<u>54</u>
Share capital		30
Profit and loss account:		
As at 31.12.20X5	3	
Add Profit 20X6	<u>21</u>	
		<u>24</u>
		<u>54</u>

At the time when P bought the shares in S, the assets in S were shown at a value of £33 in the balance sheet of S. In fact, however, P valued the fair values of the fixed assets of S as being worth £20 more than that shown in S's balance sheet. The consolidated balance sheet will therefore show them at this higher figure. In turn the depreciation on these fixed assets, which is at the rate of 20 per cent, will be increased accordingly, by £4. The consolidated balance sheet therefore appears:





### P and S Consolidated Balance Sheet as at 31 December 20X6

	£	£
Goodwill		3
Fixed assets (£80 + £70)	150	
Less Depreciation (£16 + £14)	( 30)	
		120
Current assets		40
		<u>163</u>
Share capital		100
Profit and loss account:		
(P £46 + S £21 – increased depreciation £4)		63
		<u>163</u>

## 22.4 IFRS 3: Business combinations

The international accounting standard which deals with the issues contained in FRS 7 is IFRS 3. The principles contained in both standards are broadly similar which is hardly surprising given that IFRS 3 was issued in March 2004.

### Learning outcomes

You should now have learnt:

- 1 Goodwill on the purchase of preference shares is the difference between their nominal value and the amount paid.
- 2 Unrealised profit on the sale of fixed assets between companies in a group must be eliminated upon consolidation.
- 3 'Fair values' at the time of acquisition should be used in the calculation of goodwill, rather than the value shown in the balance sheet of the subsidiary, and the consolidation of the subsidiary undertaking should also be based on those fair values.
- 4 Fair value is dependent upon the nature of the item being valued. However, the general rule is that it represents the amount for which an asset or liability could be exchanged in an arm's-length transaction, i.e. in an exchange between strangers.

### Answer to activity

- 22.1** In P's eyes, it is giving £18 for physical assets worth £17 and the goodwill figure is correspondingly  $£18 - £17 = £1$ . Assuming that the difference is in the recorded value of fixed assets, then the consolidated balance sheet will not be showing a true and fair view if it shows goodwill £3 and assets £15. The assets should be valued at £17 and goodwill recorded as £1.

## Review questions

**Note:** Unless indicated otherwise, assume that the issued share capital of all the companies in these review questions comprises of ordinary £1 shares.

**22.1** From the following balance sheets and further information you are to draw up a consolidated balance sheet as at 31 December 20X3.

### Parent Ltd Balance Sheet as at 31 December 20X3

	£	£
Investment in Subsidiary:		
400,000 shares bought 31.12.20X2		650,000
Fixed assets	450,000	
Less Depreciation	(200,000)	
		250,000
Current assets		90,000
		<u>990,000</u>
Share capital		800,000
Profit and loss:		
As at 31.12.20X2	150,000	
Add Profit for 20X3	<u>40,000</u>	
		<u>190,000</u>
		<u>990,000</u>

### Subsidiary Ltd Balance Sheet as at 31 December 20X3

	£	£
Fixed assets		370,000
Less Depreciation		(102,000)
		268,000
Current assets		240,000
		<u>508,000</u>
Share capital		400,000
Profit and loss:		
As at 31.12.20X2	60,000	
Add Profit for 20X3	<u>48,000</u>	
		<u>108,000</u>
		<u>508,000</u>

During the year Parent Ltd had sold to Subsidiary Ltd for £70,000 a fixed asset which had cost it £60,000. Subsidiary Ltd has written off 20 per cent of the amount it paid, i.e. £14,000 as depreciation for 20X3.

**22.2A** From the following balance sheets and supplementary information you are to draw up a consolidated balance sheet as at 31 March 20X4.







### Pop and Mom Ltd Consolidated Balance Sheet as at 31 March 20X4

	£	£
Investment in Son Ltd: 30,000 shares bought 31.3.20X3		74,000
Fixed assets	174,000	
Less Depreciation	( 29,000)	
		145,000
Current assets		56,000
		<u>275,000</u>
Share capital		210,000
Profit and loss:		
As at 31.3.20X3	28,000	
Add Profit for 20X4	<u>37,000</u>	
		65,000
		<u>275,000</u>

### Son Ltd Balance Sheet as at 31 March 20X4

	£	£
Fixed assets	90,000	
Less Depreciation	(36,000)	
		54,000
Current assets		20,000
		<u>74,000</u>
Share capital		30,000
Profit and loss:		
As at 31.3.20X3	18,000	
Add Profit for 20X4	<u>10,000</u>	
		28,000
General reserve (as at 31.3.20X3)		16,000
		<u>74,000</u>

During the year Pop and Mom Ltd sold a fixed asset to Son Ltd. It had cost Pop and Mom Ltd £2,000 and it was sold to Son Ltd for £3,000. Son Ltd had written off £600 as depreciation during 20X4.

## 22.3

### Parental Times Ltd Balance Sheet as at 31 March 20X5

	£	£
Investment in Subsidiary: 80,000 shares bought on 31.3.20X4		160,000
Fixed assets	110,000	
Less Depreciation for year	( 22,000)	
		88,000
Current assets		37,000
		<u>285,000</u>
Share capital		200,000
Profit and loss:		
As at 31.3.20X4	51,000	
Add Profit for 20X5	<u>34,000</u>	
		85,000
		<u>285,000</u>

**Siblings Ltd Balance Sheet as at 31 March 20X5**

	£	£
Fixed assets	90,000	
Less Depreciation for year	( 9,000)	
		81,000
Current assets		43,000
		<u>124,000</u>
Share capital		80,000
Profit and loss:		
As at 31.3.20X4	24,000	
Add Profit for 20X5	<u>20,000</u>	
		<u>44,000</u>
		<u>124,000</u>

When Parental Times Ltd bought the shares of Siblings Ltd it valued the fixed assets at £120,000 instead of the figure of £90,000 as shown in the balance sheet of Siblings Ltd.

Draw up a consolidated balance sheet as at 31 March 20X5.

**22.4A****Parent Undertakings Ltd Balance Sheet as at 31 December 20X8**

	£	£
Investment in Subsidiary: 40,000 shares bought 31.12.20X7		68,000
Fixed assets	80,000	
Less Depreciation for year	( 8,000)	
		72,000
Current assets		12,600
		<u>152,000</u>
Share capital		110,000
Profit and loss:		
As at 31.12.20X7	32,000	
Add Profit for 20X8	<u>10,000</u>	
		<u>42,000</u>
		<u>152,000</u>

**Sons and Co Ltd Balance Sheet as at 31 December 20X8**

	£	£
Fixed assets	60,000	
Less Depreciation for year	( 6,000)	
		54,000
Current assets		8,000
		<u>62,000</u>
Share capital		40,000
Profit and loss:		
As at 31.12.20X7	10,000	
Add Profit for 20X8	<u>12,000</u>	
		<u>22,000</u>
		<u>62,000</u>

When Parent Undertakings Ltd took control of Sons and Co Ltd it valued the fixed assets at 31.12.20X7 at £75,000 instead of £60,000 as shown.

Draw up the consolidated balance sheet as at 31 December 20X8.

# Consolidation of the financial statements of a vertical group of companies

## Learning objectives

After you have studied this chapter, you should be able to:

- explain how a company that is the subsidiary of another is also a subsidiary of its parent's own parent undertaking
- consolidate groups that include subsidiaries of subsidiaries

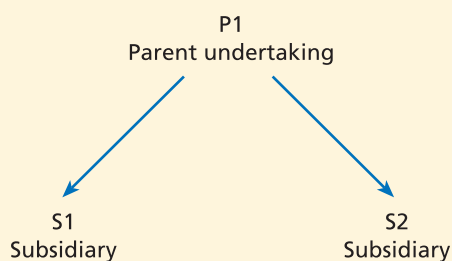
## Introduction

In this chapter, you'll learn how to deal with situations where there are layers of subsidiaries beneath one overall parent company. You will learn about the exemption that wholly owned subsidiaries have from preparing consolidated financial statements; and you will learn more about how to treat dividends when preparing consolidated financial statements.

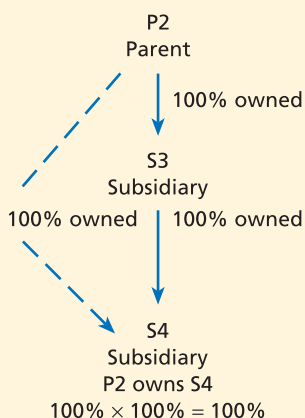
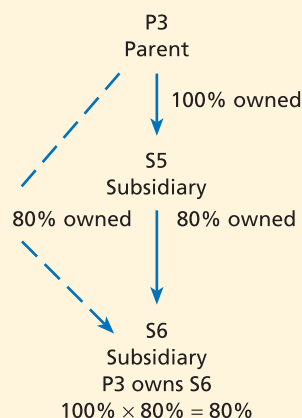
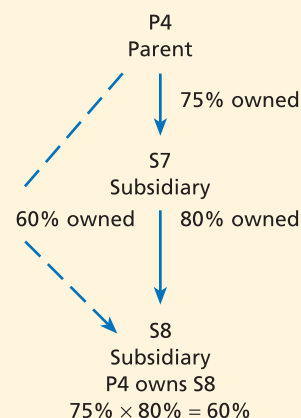
### 23.1 Subsidiaries that control other companies

So far, we have considered the case of parent undertakings having a direct interest in their subsidiary undertakings. That is, in each example and review question, the parent undertaking itself bought over 50 per cent of the voting shares in the subsidiary. In a straightforward case, where the parent company, P1, has bought shares in subsidiaries S1 and S2, it could be represented by a diagram (Exhibit 23.1).

**Exhibit 23.1**



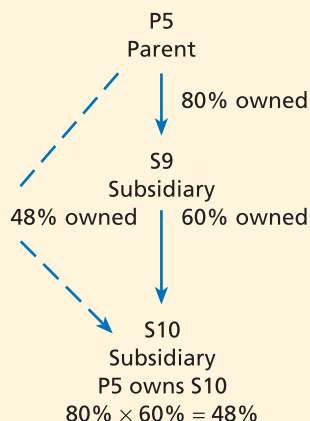
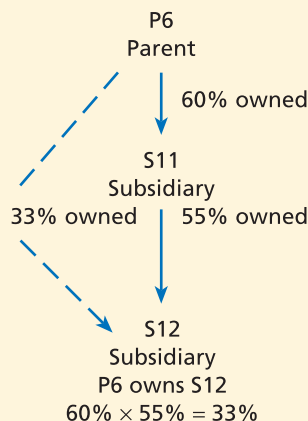
Suppose instead that another parent undertaking, P2, bought 100 per cent of the shares in S3, and that S3 then bought 100 per cent of the shares in S4. Because P2 controls S3 completely, and S3 controls S4 completely, P2 controls both S3 and S4. This is shown as Exhibit 23.2.

**Exhibit 23.2****Exhibit 23.3****Exhibit 23.4**

If another parent undertaking, P3, owned S5 100 per cent, but S5 only owned 80 per cent of S6, then we can say that P3 owns 100 per cent of 80 per cent of S6 = 80 per cent (Exhibit 23.3). Similarly if another parent undertaking, P4, owned 75 per cent of S7, and S7 owns 80 per cent of S8, then P4 owns 75 per cent  $\times$  80 per cent = 60 per cent of S8 (Exhibit 23.4).

As can be seen in Exhibits 23.2, 23.3 and 23.4, the eventual ownership by the overall parent of each subsidiary's subsidiary exceeds 50 per cent.

There will be cases where the ownership of the subsidiary of a subsidiary by the parent is less than 50 per cent. Exhibit 23.5 shows an example of this where parent undertaking P5 owns 80 per cent of S9, and S9 owns 60 per cent of S10. This means that P5 owns  $80\% \times 60\% = 48\%$  of S10. Exhibit 23.6 similarly shows that parent undertaking P6 owns 60 per cent of S11 and S11 owns 55 per cent of S12. Therefore P6 owns  $60\% \times 55\% = 33\%$  of S12.

**Exhibit 23.5****Exhibit 23.6**

It might look as though S10 is not a subsidiary of P5, because P5 owns less than 50 per cent of S10. However, P5 controls S9 as its ownership is over 50 per cent and, in turn, S9 controls S10 as it owns more than 50 per cent. In effect, therefore, P5 controls S10 and so S10 is its subsidiary even though P5 only controls 48 per cent of the share capital of S10, *because it is able to exert a dominant influence over S10*.

**Activity  
23.1**

Would P6 be considered the ultimate parent company of S12?

## 23.2 Legal exemptions from preparing consolidated financial statements

Section 228 of the Companies Act 1985 exempts a wholly-owned subsidiary from preparing consolidated financial statements. For instance, in Exhibit 23.2 the subsidiary S3 would not have to prepare consolidated financial statements; neither would S5 in Exhibit 23.3.

In each of cases S7, S9 and S11 in Exhibits 23.4, 23.5 and 23.6, there are minority shareholders. In practice, therefore, those subsidiary companies may have to prepare consolidated financial statements (for example, consolidating S7 and S8 in Exhibit 23.4) if sufficient of the minority interests demand it.

**See also Chapter 26 for FRS 2-related exemptions.**

**Activity  
23.2**

Why do you think wholly-owned subsidiaries are exempted from preparing consolidated financial statements?

## 23.3 Methods of consolidating financial statements

There are two methods of consolidating the financial statements.

- 1 The 'indirect' or 'single-stage' method follows the reasoning already given in this chapter, i.e. computing the parent's interest in the subsidiaries and their subsidiaries and taking that percentage of the capital and reserves of these companies into the consolidation process. For instance, in Exhibit 23.5 the capital and reserves would give 100% of P5 + 80% of S9 + 48% of S10.
- 2 The 'multi-stage' method first consolidates the balance sheets of the subsidiary and its subsidiary, and when that is done it is then consolidated with the balance sheet of the holding company. This recognises the fact that subsidiaries with minority interests have to produce consolidated financial statements and is more generally used in practice than the indirect method.

**For an examination, method 1 (the 'indirect' method) is to be preferred. It is a quicker method, and you will usually be short of time in an examination. Also, examination questions almost always ask for consolidation for the entire group only. As a result, there will be no need to do the intermediate consolidation. This book will therefore use method 1 only.**

## 23.4 The indirect method consolidation technique

The consolidation technique you learnt in previous chapters is very similar to the **indirect method** described in the previous section, but two points need stressing:

- 1 The entry for the cost of investment in the cost of control account:
  - (a) *For subsidiaries*: debit the total cost of investment to the cost of control account.
  - (b) *For subsidiaries of subsidiaries*: debit only **the proportion of the cost concerned with the parent's share in the subsidiary which controls the subsidiary** to the cost of control account. Debit the minority interest account with the balance.

If P invests £20,000 to buy 80 per cent of the shares of S1 and S1 then invests £10,000 to buy 60 per cent of the shares of S2, the entries in the cost of control account of the P group would be:

Cost of Control	
	£
Cost of shares in S1	20,000
Cost of shares in S2 (80%)	8,000

The remaining proportion of investment by S1 is then debited to a minority interest account.

Minority Interest	
	£
Cost of shares in S2 (20%)	2,000

- 2 The apportionment of share capital and reserves to the cost of control account and to the minority interest account:
  - (a) *Cost of control*: take only the group's ultimate share of the subsidiary of subsidiary's share capital and reserves.
  - (b) *Minority interest*: include the balance of the subsidiary of subsidiary's share capital and reserves.

In the illustration given in 1(b) where P bought 80 per cent of S1, and S1 bought 60 per cent of S2, the ultimate share of the group is  $80\% \times 60\% = 48\%$ . Therefore, in the consolidated financial statements 48 per cent should come into group calculations and 52 per cent shown in minority interest workings.

The double entry from the cost of control account when preparing the consolidated financial statements is:

Dr (appropriate) Reserve account  
Cr Cost of control account

## 23.5 A worked example without proposed dividends

### Example 1

P Ltd owns 80 per cent of the ordinary share capital of S1 Ltd. In turn S1 Ltd owns 75 per cent of the ordinary share capital of S2 Ltd. Both investments had been acquired on 31 December 20X4, one year previous to the following balance sheets:

## Balance Sheets as at December 20X5

	<i>P Ltd</i>		<i>S1 Ltd</i>		<i>S2 Ltd</i>	
	£000	£000	£000	£000	£000	£000
Fixed assets		40		4		27
Investments						
Shares in S1		41				
Shares in S2				25		
Net current assets		<u>19</u>		<u>6</u>		<u>28</u>
		<u>100</u>		<u>35</u>		<u>55</u>
Share capital		40		10		20
Profit and loss						
As at 31.12.20X4	24		5		15	
Add Profit 20X5	<u>36</u>		<u>10</u>		<u>20</u>	
		60		15		35
General reserve at 31.12.20X4		<u>100</u>		<u>10</u>		<u>55</u>
				<u>35</u>		<u>55</u>

Ownership of P can be seen to be 80 per cent of S1 and  $80\% \times 75\% = 60\%$  of S2. Any goodwill on acquisition to be written off to profit and loss.

We now will prepare a consolidated balance sheet on 31 December 20X5, one year after both acquisitions. In previous chapters the illustrations have been given on the face of the balance sheets. In this more complicated example we will use double entry accounts for the main items.

**P Ltd and its subsidiaries**  
**Consolidated Balance Sheet as at 31 December 20X5**

	£000
Fixed assets	71
Net current assets	<u>53</u>
	<u>124</u>
Share capital	40
Profit and loss (see account below)	<u>60</u>
	100
Minority interest (see account below)	<u>24</u>
	<u>124</u>

In the accounts that follow, 1(a), 1(b), 2(a) and 2(b) refer to the steps in the indirect consolidation method described in Section 23.4.

## Cost of Control

	£000		£000
Cost of shares in S1 (1(a))	41	Share capital S1 $80\% \times 10$	8
Cost of shares in S2 $80\%$ (1(b))	20	Share capital S2 $60\% \times 20$ (2(a))	12
		Pre-acquisition reserves:	
		Profit and loss S1 $80\% \times 5$	4
		Profit and loss S2 $60\% \times 15$	9
		General reserve S1 $80\% \times 10$	8
		Profit and loss: goodwill written off	<u>20</u>
	<u>61</u>		<u>61</u>

## Minority Interest

	£000		£000
Cost of shares in S2 $20\%$ (1(b))	5	Share capital S1 $20\%$	2
Balance to consolidated balance sheet	24	Share capital S2 $40\%$ (2(b))	8
		Profit and loss S1 $20\%$	3
		Profit and loss S2 $40\%$ (2(b))	14
		General reserve S1 $20\% \times 10$	<u>2</u>
	<u>29</u>		<u>29</u>

Profit and Loss			
	£000		£000
Minority interest S1	3	P	60
Minority interest S2	14	S1	15
Cost of control S1: pre-acquisition	4	S2	35
Cost of control S2: pre-acquisition	9		
Cost of control: goodwill written off	20		
Balance to consolidated balance sheet	<u>60</u>		
	<u>110</u>		<u>110</u>
General Reserve			
	£000		£000
<b>Cost of control 80% × 10</b>	<b>8</b>	S1 balance b/d	10
Minority interest 20% × 10	<u>2</u>		
	<u>10</u>		<u>10</u>

Now, let's look at the same example but, this time, with the addition of proposed dividends.

## 23.6 A worked example with proposed dividends

Taking the same companies as in Example 1 but in this case the companies have proposed dividends at 31 December 20X5 of P Ltd £16,000; S1 Ltd £5,000; S2 Ltd £20,000. The balance sheets would have appeared:

Balance Sheets as at 31 December 20X5				
	P Ltd	S1 Ltd	S2 Ltd	
	£000	£000	£000	
Fixed assets	40	4	27	
Investments				
Shares in S1	41			
Shares in S2		25		
Net current assets (as before)	19	6	28	
Dividends to be received	(80% of S1) <u>4</u>	(75% of S2) <u>15</u>		
	<u>104</u>	<u>50</u>	<u>55</u>	
	£000	£000	£000	
Share capital	40	10	20	
Profit and loss as at 31.12.20X4	24	5	15	
Retained profits for 20X5				
(see below)	<u>24</u>	<u>20</u>	<u>—</u>	
	48	25	15	
General reserve		10		
Proposed dividends	<u>16</u>	<u>5</u>	<u>20</u>	
	<u>104</u>	<u>50</u>	<u>55</u>	
<b>Note:</b>				
Retained profit	P	S1	S2	
Net profits 20X5	36	10	20	
Less Proposed dividends	(16)	(5)	(20)	
	20	5	—	
Add Dividends receivable				
P 80% of S1 × 5	4			
S1 75% of S2 × 20		15	—	
	<u>24</u>	<u>20</u>	<u>—</u>	



Now a consolidated balance sheet can be drawn up:

**P Ltd and its subsidiaries**  
**Consolidated Balance Sheet as at 31 December 20X5**

	<i>£000</i>
Fixed assets	71
Net current assets	53
	<u>124</u>
Share capital	40
Profit and loss (see account below)	44
	<u>84</u>
Minority interest (see account below)	24
Proposed dividend	16
	<u>124</u>

The cost of control figures and goodwill are the same as in Example 1 as the circumstances at the dates of acquisition had not changed.

**Profit and Loss**

	<i>£000</i>		<i>£000</i>
Minority interest:		Balances P	48
S1 20% × 25	5	S1	25
S2 40% × 15	6	S2	15
Cost of control (as before) S1	4		
Cost of control (as before) S2	9		
Cost of control: goodwill written off	20		
Balance to consolidated balance sheet	44		
	<u>88</u>		<u>88</u>

**Minority Interest**

	<i>£000</i>		<i>£000</i>
Cost of shares in S2 (20%)	5	Profit and loss S1	5
Balance to consolidated balance sheet	24	Profit and loss S2	6
		General reserve 20%	2
		Share capital S1 20%	2
		Share capital S2 40%	8
		Proposed dividends S1	1
		Proposed dividends S2 (Note (a))	5
	<u>29</u>		<u>29</u>

**Proposed Dividends**

	<i>£000</i>		<i>£000</i>
Minority interest S1	1	P	16
Minority interest S2 (25%)	5	S1	5
Consolidated balance sheet (P)	16	S2	20
Cancel against dividends receivable	19		
	<u>41</u>		<u>41</u>

**Dividends Receivable**

	<i>£000</i>		<i>£000</i>
P	4	Cancel against proposed dividends	
S1	15	(Note (b))	19
	<u>19</u>		<u>19</u>

*Notes:*

- (a) Credit is given to minority shareholders for 25 per cent of the S2 dividend, not 40 per cent. This is because 25 per cent is the amount actually received by them, while 75 per cent is received by S1, and the minority interest in this dividend is automatically calculated when we calculate the S1 minority interest in profit and loss balance £25,000 at 20 per cent. As the £25,000 figure already includes the dividend from S2, it should not be double-counted.
- (b) The balances on dividends proposed and receivable cancel out, so nothing appears in the consolidated balance sheet.
- (c) It would have been possible to show the proposed dividends applicable to minority shareholders, S1 £1,000 and S2 £5,000, as a current liability in the consolidated balance sheet, rather than show it as part of minority interest. As discussed in Activity 21.2, this would seem to be the better method. For instance, when considering the working capital or liquidity of the group it is essential that all current liabilities due to external parties should be brought into the calculation. If the proposed dividend soon to be paid to persons outside the group were excluded, this could render the calculations completely invalid.

### Learning outcomes

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#### You should now have learnt:

- 1** A company that is the subsidiary of another is also a subsidiary of its parent's own parent undertaking, even where the ultimate parent's shareholding is below 50 per cent.
- 2** There are two recognised methods of consolidating the financial statements of groups that contain subsidiaries of subsidiaries:
  - (a) the multi-stage method is generally more common in practice, but
  - (b) the indirect single-stage method is recommended for examinations.
- 3** The indirect method involves computing the parent undertaking's interest in the subsidiaries and their subsidiaries and taking that percentage of the capital and reserves of these companies into the consolidation process.

### Answers to activities

- 23.1** Yes. Although P6 has effective ownership of only 33 per cent of S12, it can exercise a dominant influence over S11, as it owns 60 per cent of the company. S11, in turn, can exercise a dominant influence over S12 through its 55 per cent ownership. Consequently, P has dominant influence over both S11 and, through S11, of S12 and so P is the ultimate parent of S12.
- 23.2** There is no shareholder who would want to read them, other than the parent company, and it has access to far more detailed financial information about the subsidiary and its own subsidiaries than would ever be contained in the subsidiary's consolidated financial statements.

## Review questions

**Note:** In all these review questions, unless otherwise indicated, assume that the share capital of all the companies comprises of ordinary £1 shares.

**23.1** From the following balance sheets, you are to draft a consolidated balance sheet for the group of Parent Ltd and its two subsidiaries, Sub 1 and Sub 2.

### Parent Ltd Balance Sheet as at 31 December 20X4

	£	£
Investment in Sub 1: 45,000 shares bought 31.12.20X3		115,000
Fixed assets		495,000
Current assets		<u>125,000</u>
		<u>735,000</u>
Share capital		500,000
Profit and loss:		
As at 31.12.20X3	75,000	
Add Profit for 20X4	<u>110,000</u>	
		185,000
General reserve		<u>50,000</u>
		<u>735,000</u>

### Sub 1 Ltd Balance Sheet as at 31 December 20X4

	£	£
Investment in Sub 2: 7,000 shares bought 31.12.20X3		30,000
Fixed assets		110,000
Current assets		<u>25,000</u>
		<u>165,000</u>
Share capital		50,000
Profit and loss:		
As at 31.12.20X3	35,000	
Add Profit for 20X4	<u>80,000</u>	
		115,000
		<u>165,000</u>

### Sub 2 Ltd Balance Sheet as at 31 December 20X4

	£	£
Fixed assets		12,000
Current assets		<u>6,000</u>
		<u>18,000</u>
Share capital		10,000
Profit and loss:		
As at 31.12.20X3	2,000	
Add Profit for 20X4	<u>6,000</u>	
		8,000
		<u>18,000</u>

**23.2A** From the following balance sheets prepare a consolidated balance sheet for the group of Parenting Ltd, Sub A and Sub B.

**Parenting Ltd Balance Sheet as at 31 March 20X3**

	£	£
Investment in Sub A: 40,000 shares bought 31.3.20X2		97,500
Fixed assets		500,000
Current assets		<u>100,000</u>
		<u>697,500</u>
Share capital		500,000
Profit and loss:		
As at 31.3.20X2	107,500	
Add Profit for year ended 31.3.20X3	<u>90,000</u>	
		<u>197,500</u>
		<u>697,500</u>

**Sub A Balance Sheet as at 31 March 20X3**

	£	£
Investment in Sub B: 17,500 shares bought 31.3.20X2		32,500
Fixed assets		40,000
Current assets		<u>10,000</u>
		<u>82,500</u>
Share capital		50,000
Profit and loss:		
As at 31.3.20X2	15,000	
Add Profit for year ended 31.3.20X3	<u>10,000</u>	
		25,000
General reserve (as at 31.3.20X3)		<u>7,500</u>
		<u>82,500</u>

**Sub B Balance Sheet as at 31 March 20X3**

	£	£
Fixed assets		26,250
Current assets		<u>13,750</u>
		<u>40,000</u>
Share capital		25,000
Profit and loss:		
As at 31.3.20X2	2,500	
Add Profit for year ended 31.3.20X3	<u>12,500</u>	
		<u>15,000</u>
		<u>40,000</u>

**23.3** On 1 April 20X1, Machinery Limited bought 80 per cent of the ordinary share capital of Components Limited. On 1 April 20X3, Machinery Limited was itself taken over by Sales Limited who purchased 75 per cent of the ordinary shares in Machinery Limited.





The balance sheets of the three companies at 31 October 20X5 prepared for internal use showed the following position:

	<i>Sales Ltd</i>		<i>Machinery Ltd</i>		<i>Components Ltd</i>	
	£	£	£	£	£	£
<b>Fixed assets</b>						
Freehold land at cost		89,000		30,000		65,000
Buildings at cost	100,000		120,000		40,000	
Less						
Accumulated depreciation	( 36,000)		( 40,000)		(16,400)	
		64,000		80,000		23,600
Plant and equipment at cost	102,900		170,000		92,000	
Less						
Accumulated depreciation	( 69,900)		( 86,000)		(48,200)	
		<u>33,000</u>		<u>84,000</u>		<u>43,800</u>
		186,000		194,000		132,400
<b>Investments</b>						
Shares in Machinery at cost		135,000				
Shares in Components at cost				96,000		
<b>Current assets</b>						
Stocks	108,500		75,500		68,400	
Debtors	196,700		124,800		83,500	
Cash at bank	<u>25,200</u>		<u>—</u>		<u>25,400</u>	
		<u>330,400</u>		<u>200,300</u>		<u>177,300</u>
		651,400		490,300		309,700
<b>Current liabilities</b>						
Creditors	160,000		152,700		59,200	
Bank overdraft	—		37,400		—	
Corporation tax	57,400		47,200		24,500	
Proposed dividends	<u>80,000</u>		<u>48,000</u>		<u>12,000</u>	
		(297,400)		(285,300)		( 95,700)
		<u>354,000</u>		<u>205,000</u>		<u>214,000</u>
Ordinary shares		200,000		120,000		100,000
10% preference shares		—		—		40,000
Revenue reserves		<u>154,000</u>		<u>85,000</u>		<u>74,000</u>
		<u>354,000</u>		<u>205,000</u>		<u>214,000</u>

**Additional information:**

- All ordinary shares are £1 each, fully paid.
- Preference shares in Components Ltd are 50p each fully paid.
- Proposed dividends in Components Ltd are:
  - on ordinary shares £10,000;
  - on preference shares £2,000.
- Proposed dividends receivable by Sales Ltd and Machinery Ltd are included in debtors.
- All creditors are payable within one year.
- Items purchased by Machinery Ltd from Components Ltd and remaining in stock at 31 October 20X5 amounted to £25,000. The profit element is 20 per cent of selling price for Components Ltd.
- Depreciation policy of the group is to provide for:
  - buildings – at the rate of 2 per cent on cost each year;
  - plant and equipment – at the rate of 10 per cent on cost each year including full provision in the year of acquisition.

These policies are applied by all members of the group.

Included in the plant and equipment of Components Ltd is a machine purchased from the manufacturers, Machinery Ltd, on 1 January 20X4 for £10,000. Machinery Ltd recorded a profit of £2,000 on the sale of the machine.

(h) Intra-group balances are included in debtors and creditors respectively and are as follows:

		£
Sales Ltd	Creditors – Machinery Ltd	45,600
	– Components Ltd	28,900
Machinery Ltd	Debtors – Sales Ltd	56,900
Components Ltd	Debtors – Sales Ltd	28,900

- (i) A cheque drawn by Sales Ltd for £11,300 on 28 October 20X5 was received by Machinery Ltd on 3 November 20X5.
- (j) At 1 April 20X1, reserves in Machinery Ltd were £28,000 and in Components Ltd £20,000. At 1 April 20X3 the figures were £40,000 and £60,000 respectively.

**Required:**

Prepare a group balance sheet at 31 October 20X5 for Sales Ltd and its subsidiaries complying, so far as the information will allow, with the accounting requirements of the Companies Acts.

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**23.4A** Bryon Ltd has held 1,500,000 shares in Carlyle Ltd for many years. At the date of acquisition, the reserves of Carlyle Ltd amounted to £800,000. On 31 March 20X6 Carlyle Ltd bought 400,000 shares in Doyle Ltd for £600,000 and a further 400,000 shares were purchased on 30 June 20X6 for £650,000.

At 30 September 20X6 the balance sheets of the three companies were:

	Bryon Ltd		Carlyle Ltd		Doyle Ltd	
	£	£	£	£	£	£
Freehold land and buildings						
– cost		950,000		1,375,000		300,000
Plant and equipment						
Cost	500,000		10,000,000		750,000	
Depreciation	(280,000)		(7,500,000)		(500,000)	
		<u>220,000</u>		<u>2,500,000</u>		<u>250,000</u>
		1,170,000		3,875,000		550,000
Investments						
1,500,000 shares in Carlyle Ltd		1,600,000				
800,000 shares in Doyle Ltd				1,250,000		
Stocks	50,000		2,050,000		850,500	
Debtors	325,000		2,675,000		1,700,000	
Cash at bank	<u>25,500</u>		<u>–</u>		<u>16,500</u>	
		<u>400,500</u>		<u>4,725,000</u>		<u>2,567,000</u>
		3,170,500		9,850,000		3,117,000
Creditors under 1 year	91,500		2,385,750		1,395,800	
Proposed dividend	200,000					
Bank overdraft	<u>–</u>		<u>1,450,850</u>		<u>–</u>	
		(291,500)		(3,836,600)		(1,395,800)
		2,879,000		6,013,400		1,721,200
10% debenture		<u>–</u>		<u>(2,000,000)</u>		<u>–</u>
		<u>2,879,000</u>		<u>4,013,400</u>		<u>1,721,200</u>
Ordinary shares of £1 each		2,000,000				1,200,000
50p each				1,000,000		
8% redeemable preference shares of £1 each				2,000,000		
Reserves		<u>879,000</u>		<u>1,013,400</u>		<u>521,200</u>
		<u>2,879,000</u>		<u>4,013,400</u>		<u>1,721,200</u>



Proposed dividends have not yet been provided for on the shares in Carlyle Ltd and Doyle Ltd although Bryon Ltd has included dividends of 5p per share as receivable from Carlyle Ltd in debtors. Dividends on the preference shares were paid for one-half year on 1 April 20X6; the next payment date was 1 October 20X6. Dividends on the ordinary shares in Doyle Ltd are proposed at the rate of 10p per share and on Carlyle's shares as anticipated by Bryon.

Profits for the year in Doyle Ltd were £310,000, before making any adjustments for consolidation, accruing evenly through the year.

The directors of Bryon Ltd consider that the assets and liabilities of Carlyle Ltd are shown at fair values, but fair values for Doyle Ltd for the purposes of consolidation are:

	£	£
Freehold land and building		500,000
Plant and equipment – Valuation	968,400	
– Depreciation	<u>639,600</u>	
		328,800

Other assets and liabilities are considered to be at fair values in the balance sheet.

Additional depreciation due to the revaluation of the plant and equipment in Doyle Ltd amounts to £40,000 for the year to 30 September 20X6.

Included in stocks in Carlyle Ltd are items purchased from Doyle Ltd during the last three months of the year, on which Doyle Ltd recorded a profit of £80,000.

On 30 September 20X6 Carlyle Ltd drew a cheque for £100,000 and sent it to Doyle Ltd to clear the current account. As this cheque was not received by Doyle Ltd until 3 October, no account was taken of it in the Doyle Ltd balance sheet.

**Required:**

Prepare a balance sheet as at 30 September 20X6 for Bryon Ltd and its subsidiaries, conforming with the Companies Acts so far as the information given will permit.

Ignore taxation.

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You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Consolidated profit and loss accounts

## Learning objectives

After you have studied this chapter, you should be able to:

- prepare consolidated profit and loss accounts for groups with wholly-owned subsidiaries
- prepare consolidated profit and loss accounts for groups with partly-owned subsidiaries

## Introduction

In this chapter, you'll learn how to prepare consolidated profit and loss accounts for groups with either wholly-owned subsidiaries, partly-owned subsidiaries, or both.

### 24.1 The consolidated profit and loss account

So far, we've been looking at how to prepare the consolidated balance sheet. However, consolidated financial statements comprise of all the financial statements that must be prepared by individual companies, not just the balance sheet.

The consolidated profit and loss account is drawn up to show the overall profit (or loss) of the companies in the group, treating the group as a single entity. If all of the subsidiaries are owned 100 per cent, and there are no intra-group dividends or unrealised profits in stock, then it is simply a case of adding together all the amounts contained in each of the individual company profit and loss accounts to form the consolidated profit and loss account. However, such a simple situation is very rarely found in practice.

#### Activity 24.1

Why can't we simply add together all of the separate profit and loss accounts to form the consolidated profit and loss account when the subsidiaries are partly owned and there are no intra-group dividends or unrealised profits on stock?

Exhibit 24.1 shows the framework for preparing a consolidated profit and loss account giving details of the adjustments needed. As similar principles are applied to those used when preparing a consolidated balance sheet, you will see that it is done in much the same way as was shown in Chapters 19–23.

**Note:** This exhibit looks very complicated. It isn't. All we have done is summarised most of the equivalent balance sheet adjustments into one exhibit, rather than distancing them out over four or five chapters. If you find it difficult to understand, refer back to the equivalent balance sheet adjustments. This should help you follow what is being done.



## Exhibit 24.1

## Specimen Profit and Loss Account for the Year ended . . .

		£000	£000	
Turnover	(a)		200	} Parent plus subsidiaries less cancellation of intra-group items
Cost of sales	(b)		(120)	
Gross profit			80	
Distribution costs		10		
Administrative expenses		<u>20</u>		
			(30)	
Profit on ordinary activities before taxation			50	
Tax on profit on ordinary activities	(c)		(14)	
Profit on ordinary activities after taxation			36	
Minority interest	(d)		(4)	
Profit for the financial year			32	
Retained profits from last year	(e)		<u>7</u>	
			39	} Parent only
Proposed dividend	(f)	15		
Transfer to reserves	(g)	<u>8</u>		
			(23)	
Retained profits carried to next year			<u>16</u>	

## Notes:

- (a) Turnover. Intra-group sales to be deducted.
- (b) Cost of sales: (i) Intra-group purchases. This is the same figure as for (a), as the price at which sales are made by one group company is the same figure at which the other group company has bought them. (ii) Adjust for unrealised profit in stock, by reducing closing stock. As cost of sales = opening stock + purchases – closing stock, any reduction in closing stock will increase 'cost of sales'. The balance sheet stock figure will be reduced by unrealised profits.
- (c) Tax on profit on ordinary activities. This is the sum of tax for all companies within the group.
- (d) Minority interest:
- (i) If ordinary shares only are issued by subsidiary: deduct the minority interest's percentage of the subsidiary's profits *after* taxation.
- (ii) If preference shares are also issued by the subsidiary this figure is found by:  
 Minority interest percentage of preference share capital × total preference dividend for the year  
*plus*  
 Minority interest percentage of ordinary share capital × balance of profits (i.e. after tax and preference dividend) for the year, e.g.  
 Total preference shares £1,000: Minority interest £400.  
 Total ordinary shares £2,000: Minority interest £500.  
 Total preference dividend for year £150.  
 Profit of subsidiary after tax but before ordinary share dividend: £950.

Therefore, the minority interest is:

Share of preference dividend: $40\% \times £150$	=	60
Share of balance of after-tax profits: $25\% \times (£950 - £150)$	=	<u>200</u>
		<u>260</u>

- (e) This is the parent's retained profits plus the group's share of the post-acquisition profit of the subsidiaries.
- (f) Only the parent's dividend is included.
- (g) Those of the parent plus the group's share of the subsidiary's transfers to reserves.

Let's look at two more examples. One shows the consolidation of the profit and loss account when the subsidiary is wholly owned (Exhibit 24.2) and the other shows it where there is a minority interest in the subsidiary company (Exhibit 24.3).

### Exhibit 24.2 Where the subsidiary is wholly owned

P Ltd owns 100 per cent of the share capital of S Ltd. The profit and loss accounts of these companies for the year ending 31 December 20X4 are:

<i>Profit and loss accounts</i>	<i>P Ltd</i>		<i>S Ltd</i>	
	<i>£000</i>	<i>£000</i>	<i>£000</i>	<i>£000</i>
Turnover		400		280
Cost of sales		(270)		(190)
Gross profit		130		90
Distribution costs	20		10	
Administrative expenses	30		15	
		( 50)		(25)
Profit on operating activities		80		65
Dividend receivable		30		—
Profit on ordinary activities before taxation		110		65
Tax on profit on ordinary activities		( 17)		(11)
Profit on ordinary activities after taxation		93		54
Retained profits from last year		11		7
		104		61
Proposed dividend	40		30	
Transfer to reserves	5		2	
		( 45)		(32)
Retained profits carried to next year		<u>59</u>		<u>29</u>

Notes:

- (a) P Ltd had sold goods which cost £10,000 to S Ltd for £15,000.
- (b) At the balance sheet date, 40 per cent of the goods in (a) had not been sold by S Ltd.
- (c) Of the £7,000 retained profits from last year for S Ltd, £3,000 is in respect of post-acquisition profits.

The consolidated profit and loss account is:

<b>P Group Ltd</b>		
<b>Consolidated Profit and Loss Account for the year ending 31 December 20X4</b>		
	<i>£000</i>	<i>£000</i>
Turnover (W1)		665
Cost of sales (W2)		(447)
Gross profit		218
Distribution costs	30	
Administrative expenses	45	
		( 75)
Profit on ordinary activities before taxation		143
Tax on profit on ordinary activities		( 28)
Profit on ordinary activities after taxation		115
Retained profits from last year (W3)		14
		129
Proposed dividend (W4)	40	
Transfer to reserves (W5)	7	
		( 47)
Retained profits carried to next year		<u>82</u>



**Workings:**

Letters (a) to (g) refer to the descriptions given above and in Exhibit 24.1.

(W1)  $P\ 400 + S\ 280 - 15\ \text{intercompany sales} = 665$  (a).

(W2)  $P\ 270 + S\ 190 - 15\ \text{intercompany purchases} + \text{the unrealised profit in stock } (40\% \times 5 = 2) = 447$  (b) (i) and (ii).

(W3)  $P\ 11 + S\ 3 = 14$ . Only the post-acquisition profits of S are included. (See (e) in Exhibit 24.1.)

(W4) Only P's dividend is included because S's dividend will be received by P and will, therefore, cancel out. (See (f) in Exhibit 24.1.)

(W5)  $P\ 5 + S\ (100\%)2 = 7$ . (See (g) in Exhibit 24.1.)

**Note:** The difference between the total retained profit found of £82 and the total of the two retained profits shown in the individual company profit and loss accounts (£59 + £29 = £88) is £6. This represents £2 unrealised profit [b(ii)] and the £4 pre-acquisitions profits of S Ltd.

**Activity  
24.2**

Why was the £2 unrealised profit in the stock held by S Ltd added to the consolidated figure for cost of sales in Working 2?

**Exhibit 24.3 Where there is a minority interest in the subsidiary**

P2 Ltd owns 80 per cent of shares in S2 Ltd. Profit and loss accounts of the companies for the year ending 31 December 20X2 are as follows:

<i>Profit and loss accounts</i>	<i>P2 Ltd</i>		<i>S2 Ltd</i>	
	<i>£000</i>	<i>£000</i>	<i>£000</i>	<i>£000</i>
Turnover		640		330
Cost of sales		(410)		(200)
Gross profit		230		130
Distribution costs	35		20	
Administrative expenses	70		55	
		(105)		(75)
Profit on operating activities		125		55
Dividend receivable		28		—
Profit on ordinary activities before taxation		153		55
Tax on profit on ordinary activities		( 26)		(10)
Profit on ordinary activities after taxation		127		45
Retained profits from last year		29		35
		156		80
Proposed dividend	60		35	
Transfers to reserves	22		10	
		( 82)		(45)
Retained profits carried to next year		74		35

**Notes:**

(a) S2 Ltd had sold goods which cost £20,000 to P2 Ltd for £30,000.

(b) At the balance sheet date, 30 per cent of the goods in (a) had not been sold by P2 Ltd.

(c) Of the £35,000 retained profits of S2 Ltd brought forward, £15,000 is post-acquisition profits.

**P2 Group Ltd**  
**Consolidated Profit and Loss Account for the year ending 31 December 20X2**

	£000	£000
Turnover (W1)		940
Cost of sales (W2)		(583)
Gross profit		357
Distribution costs	55	
Administrative expenses	<u>125</u>	
		(180)
Profit on ordinary activities before taxation		177
Tax on profit on ordinary activities		( 36)
Profit on ordinary activities after taxation		141
Minority interest (W3)		( 9)
Profit for the financial year		132
Retained profits from last year (W4)		<u>41</u>
		173
Proposed dividend (W5)	60	
Transfer to reserves (W6)	<u>30</u>	
		( 90)
Retained profits carried to next year		<u>83</u>

**Workings:**

Letters (a) to (g) refer to the descriptions given above and in Exhibit 24.1.

(W1)  $P2\ 640 + S2\ 330 - \text{intercompany sales } 30 = 940$  (a).

(W2)  $P2\ 410 + S2\ 200 - \text{intercompany purchases } 30 + \text{unrealised profit in stock } (30\% \times 10 = 3) = 583$  (b) (i) and (ii).

(W3)  $20 \text{ per cent} \times 45: \text{profit after taxation of } S2 \text{ Ltd} = 9$  (d) (i).

(W4)  $P2\ 29 + S2\ (80\% \times 15 = 12) = 41$  (e).

(W5) Only the dividend of P2 shown. See (f).

(W6)  $P2\ 22 + S2\ (80\% \times 10 = 8) = 30$  (g).

**Activity**  
**24.3**

Explain the difference between the consolidated retained profits figure of £83 and the total of £109 found if you add together the retained profits of P2 Ltd and S2 Ltd.

**Note:** If you remember the adjustments made to reconcile the consolidated retained profit figure in Activity 24.3, you should have no difficulty preparing consolidated profit and loss accounts.

## Learning outcomes

You should now have learnt:

- 1 When consolidating profit and loss accounts for groups with wholly-owned subsidiaries with no intra-group transactions or indebtedness, it is simply a case of adding together all the separate profit and loss accounts to form the consolidated profit and loss account.
- 2 When consolidating profit and loss accounts, adjustments for unrealised profits on intra-group transactions and for intra-group indebtedness must be made where they exist (as per Chapters 19, 21, and 22).
- 3 When consolidating profit and loss accounts for groups with partly-owned subsidiaries, the approaches detailed in Chapters 17 and 23 should be followed.

## Answers to activities

- 24.1** You need to deduct the minority interest in the profits or losses of the subsidiary when combining the figures for profits and/or losses of the companies for the period.
- 24.2** It was added because it was deducted from the purchases of S Ltd when the cost of sales figure for S Ltd was calculated. As it represents unrealised profit, it needs to be added back, so increasing the cost of sales of the group to the correct figure – i.e. one that does not include any unrealised profit.
- 24.3** The difference of £26 comprises: £20 (pre-acquisition profits) + £3 (unrealised profit in stock) + £3 (minority interest share of post-acquisition profits) + £9 (minority interest share of this year's profit of S2) – £7 (dividend proposed by S2 payable to minority share holders) – £2 (minority interest share of amounts transferred to reserves).

## Review questions

**Note:** Unless otherwise indicated, assume that the share capital of all the companies in these review questions comprises of ordinary £1 shares.

**24.1** The following information relates to the Brodick group of companies for the year to 30 April 20X7:

	<i>Brodick plc</i>	<i>Lamlash Ltd</i>	<i>Corrie Ltd</i>
	<i>£000</i>	<i>£000</i>	<i>£000</i>
Turnover	1,100	500	130
Cost of sales	( 630)	(300)	( 70)
Gross profit	470	200	60
Administrative expenses	(105)	(150)	( 20)
Dividend from Lamlash Ltd	24	–	–
Dividend from Corrie Ltd	6	–	–
Profit before tax	395	50	40
Taxation	( 65)	( 10)	( 20)
Profit after tax	330	40	20
Interim dividend	( 50)	( 10)	–
Proposed dividend	(150)	( 20)	( 10)
Retained profit for the year	130	10	10
Retained profits brought forward	460	106	30
Retained profits carried forward	<u>590</u>	<u>116</u>	<u>40</u>

*Additional information:*

- (a) The issued share capital of the group was as follows:  
 Brodick plc: 5,000,000 ordinary shares of £1 each;  
 Lamlash Ltd: 1,000,000 ordinary shares of £1 each; and  
 Corrie Ltd: 400,000 ordinary shares of £1 each.
- (b) Brodick plc purchased 80 per cent of the issued share capital of Lamlash Ltd in 20X0. At that time, the retained profits of Lamlash amounted to £56,000.
- (c) Brodick plc purchased 60 per cent of the issued share capital of Corrie Ltd in 20X4. At that time, the retained profits of Corrie amounted to £20,000.
- (d) Brodick plc recognises dividends proposed by other group companies in its profit and loss account.

### Required:

In so far as the information permits, prepare the Brodick group of companies' consolidated profit and loss account for the year to 30 April 20X7 in accordance with the Companies Acts and related accounting statements. (Note: Notes to the profit and loss account are not required, but you should append a statement showing the make-up of the 'retained profits carried forward', and your workings should be submitted.)

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**24.2** You are presented with the following summarised information for Norbreck plc and its subsidiary, Bispham Ltd:

**Profit and Loss Accounts for the year to 30 September 20X7**

	<i>Norbreck plc</i> £000	<i>Bispham Ltd</i> £000
Turnover	1,700	450
Cost of sales	( 920)	( 75)
<i>Gross profit</i>	780	375
Administration expenses	(300)	(175)
Income from shares in group company	120	—
<i>Profit on ordinary activities before taxation</i>	600	200
Tax on profit on ordinary activities	( 30)	( 20)
<i>Profit on ordinary activities after taxation</i>	570	180
Dividends: paid	( 90)	( 50)
proposed	(270)	(100)
<i>Retained profit for the year</i>	210	30
Retained profit brought forward	220	70
Retained profit carried forward	<u>430</u>	<u>100</u>

**Balance Sheets at 30 September 20X7**

	<i>Norbreck plc</i> £000	<i>Bispham Ltd</i> £000
Fixed tangible assets	1,280	440
Investments: Shares in group company	400	—
<i>Current assets</i>		
Stocks	300	250
Debtors (including, for Norbreck plc, the dividend proposed by the subsidiary)	280	150
Cash at bank and in hand	40	10
	<u>620</u>	<u>410</u>
<i>Creditors (amounts falling due within one year)</i>		
Trade creditors	( 80)	(160)
Other creditors, taxation and social security	( 160)	( 70)
Proposed dividend	( 270)	(100)
	<u>( 510)</u>	<u>(330)</u>
Net current assets	110	80
Total assets less current liabilities	1,790	520
Provisions for liabilities and charges		
Taxation, including deferred taxation	( 460)	( 20)
	<u>1,330</u>	<u>500</u>
<i>Capital and reserves</i>		
Called-up share capital (ordinary shares of £1 each)	900	400
Profit and loss account	430	100
	<u>1,330</u>	<u>500</u>

*Additional information:*

- Norbreck plc acquired 80 per cent of the shares in Bispham Ltd on 1 October 20X4. Bispham's profit and loss account balance as at that date was £40,000.
- Goodwill arising on acquisition is to be written off against the group's retained profits.
- Norbreck takes credit within its own books of account for any dividends receivable from Bispham.

**Required:**

Prepare Bispham plc's consolidated profit and loss account for the year to 30 September 20X7 and a consolidated balance sheet as at that date.

*Note:* Formal notes to the account are not required, although detailed workings should be submitted with your answer. You should also append to the consolidated profit and loss account your calculation of earnings per share and a statement showing the make-up of 'retained profits carried forward'.

(Association of Accounting Technicians)

**24.3A** The following figures for the year to 30 April 20X6 have been extracted from the books and records of three companies which form a group:

	<i>Old plc</i> £	<i>Field Ltd</i> £	<i>Lodge Ltd</i> £
Revenue reserves at 1 May 20X5	30,000	40,000	50,000
Stocks at 1 May 20X5	90,000	150,000	80,000
Sales	1,250,000	875,000	650,000
Purchases	780,000	555,000	475,000
Distribution expenses	125,000	85,000	60,000
Administration expenses	28,000	40,000	72,000
Interim dividends:			
Paid 31 July 20X5, ordinary	45,000	35,000	15,000
Paid 31 October 20X5, preference		4,000	
Share capital – fully paid ordinary shares of £1 each	450,000	350,000	200,000
8% preference shares of £1 each		100,000	
Stocks at 30 April 20X6	110,000	135,000	85,000

Profits are deemed to accrue evenly throughout the year.

*Other information:*

(a) Corporation tax of the following amounts is to be provided on the profits of the year:

Old plc	£125,000
Field Ltd	£75,000
Lodge Ltd	£20,000

(b) Final dividends proposed are:

Old plc	15p per share
Field Ltd	12.5p per share on the ordinary shares and a half-year's dividend on the preference shares
Lodge Ltd	7.5p per share

(c) Field Ltd sells goods for resale to both Old plc and Lodge Ltd. At 30 April 20X6, stocks of goods purchased from Field Ltd are:

in Old plc	£40,000
in Lodge Ltd	£28,000

The net profit percentage for Field Ltd on sales of these goods is 25 per cent.

Old plc has £36,000 of these goods in stock at 1 May 20X5.

Total sales in the year by Field Ltd to Old plc were £150,000 and to Lodge Ltd £120,000.

(d) Old plc acquired the whole of the ordinary shares in Field Ltd many years ago. 50,000 of the preference shares were acquired on 1 August 20X5. Old plc acquired 120,000 shares in Lodge Ltd on 1 August 20X5.

**Required:**

A consolidated profit and loss account for Old plc and its subsidiaries for the year ended 30 April 20X6, together with any relevant notes.

(Association of Chartered Certified Accountants)

**24.4A** The following are the trial balances of ATH Ltd, GLE Ltd, and FRN Ltd as at 31 December 20X8.

	ATH Ltd	GLE Ltd	FRN Ltd
	£	£	£
Ordinary share capital (shares of £1 each, fully paid)	100,000	30,000	20,000
7 per cent cumulative preference share capital (shares of £1 each, fully paid)	–	–	5,000
Profit and loss account – balance at 31.12.20X7	15,600	6,000	1,900
Current liabilities	20,750	15,900	18,350
Sales	194,000	116,000	84,000
Dividend received from GLE Ltd	1,200		
	<u>331,550</u>	<u>167,900</u>	<u>129,250</u>
Fixed assets	45,000	29,000	25,000
Current assets	46,000	27,500	22,500
24,000 ordinary shares in GLE Ltd at cost	33,700	–	–
20,000 ordinary shares in FRN Ltd at cost	21,250	–	–
Cost of goods sold	153,000	87,000	63,000
General expenses	32,600	22,900	18,750
Dividend for 20X8, paid on 31.12.20X8	–	1,500	–
	<u>331,550</u>	<u>167,900</u>	<u>129,250</u>

ATH Ltd acquired the shares in FRN Ltd on 31 December 20X6, when the credit balance on the profit and loss account of FRN Ltd was £700, and acquired the shares in GLE Ltd on 31 December 20X7. No dividend was paid by either ATH Ltd or GLE Ltd for the year 20X7.

No dividend has been paid by FRN Ltd for the years 20X6, 20X7 and 20X8 and none is proposed. The directors of ATH Ltd propose to pay a dividend of £7,000 for 20X8.

The sales of GLE Ltd for 20X8 (£116,000) include £1,000 for goods sold to FRN Ltd and this amount has been debited to purchases account in the books of FRN Ltd.

All these goods were sold by FRN Ltd during 20X8.

**Required:**

A consolidated trading and profit and loss account for the year 20X8 and a consolidated balance sheet as on 31 December 20X8 (not necessarily in a form for publication).

Ignore depreciation of fixed assets and taxation.

(Institute of Chartered Secretaries and Administrators)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)



# Consolidated financial statements: acquisitions and mergers

## Learning objectives

After you have studied this chapter, you should be able to:

- explain when merger accounting should be used
- explain the difference between the acquisition and the merger methods of preparing consolidated financial statements

## Introduction

In this chapter, you'll learn about the two accounting methods used to combine the accounting information when two companies join together to form one new overall organisation: acquisition accounting and merger accounting.

### 25.1

## Methods used to account for the combination of companies

When two limited companies join together to form one new overall organisation, it is obvious that the shares of both companies must come under common ownership. There are two main methods of achieving this, each of which has its own distinct set of accounting entries and procedures: 'acquisition accounting', which would normally be applied (and which has been assumed throughout Chapters 16 to 24); and 'merger accounting', which can only be appropriate under very specific circumstances. Under UK accounting standards, acquisition accounting is dealt with in FRS 2: *Accounting for subsidiary undertakings*, FRS 6: *Acquisitions and mergers* and FRS 7: *Fair values in acquisition accounting*. FRS 6 also deals with the merger accounting approach. The equivalent international accounting standards are IAS 27: *Consolidated and separate financial statements* and IFRS 3: *Business combinations*.

### Examples of combinations where it would be appropriate to adopt acquisition accounting

Merger accounting is very rare in the UK since FRS 6 was issued in 1994. Acquisition accounting is the norm, even where it does not ideally suit the circumstances of the business combination. However, there are many instances when it is always preferable to use acquisition accounting rather than merger accounting.

A common approach to the formation of new business combinations is for one company, A, to purchase all the shares of another company, B, often by A making a cash payment to the shareholders of B. In accepting the cash, the shareholders of B sever their links with the company. Company A's shareholders now control both companies.



Another common approach is where company A issues debentures (loan stock) to company B's shareholders in exchange for their shareholdings in B: the new debenture holders have no voting power in the new group, which would be controlled by the shareholders of A.

In both of these cases, **acquisition accounting** should *always* be used.

### Examples of combinations where it would be appropriate to adopt merger accounting

When company A does not pay cash or issue debentures to the old shareholders of company B but instead, issues the shareholders of B new equity (ordinary voting) shares in A, the result is that shareholders of A and B have 'merged' into one and, between them, have a joint interest in the new group. This is often referred to as a 'pooling of interest'.

A variation on this is the 'new entity' method of combination. Here, a new company, C, is formed to take over A and B, giving the old shareholders of A and B new (ordinary voting) shares in C. Once again, the two sets of shareholders have 'merged' into one.

In both these cases, **merger accounting** may be used, but *only if a number of conditions contained in FRS 6 are met*. Otherwise, acquisition accounting must be used.

Exhibit 25.1 shows the conditions to be met if merger accounting is to be used under FRS 6.

**Note: Under IFRS 3 (Business combinations), only acquisition accounting is permitted.**

## 25.2 Acquisition accounting method

As mentioned above, this is the method that has been adopted in Chapters 16–24. In the books of the parent undertaking:

- (a) shares purchased in a subsidiary are shown at cost less dividends received out of pre-acquisition profits;
- (b) dividends out of pre-acquisition profits cannot be regarded as available for distribution as dividends by the parent.

In the consolidated financial statements:

- (c) assets *and* liabilities of the subsidiary at the date of acquisition are shown in the balance sheet at their fair value at that date;
- (d) the difference at the date of acquisition between the fair value of the purchase consideration and the fair value of the net assets acquired is treated as goodwill;
- (e) only post-acquisition profits of the subsidiary attributable to members of the group should be included in the consolidated reserves of the group.

The idea underlying these rules is to stop capital receipts, i.e. dividends from pre-acquisition profits, being paid out as dividends. Clearly, they also prevent reserves attributable to minority shareholders from being treated as if they belong to the group.

The consolidation of balance sheets using the *acquisition* method is now shown in Exhibit 25.2. You should know this well by now but, if you do find any items in the Exhibit hard to follow, refer back to the chapter in which that item was first explained.

**Exhibit 25.2**

A Ltd made an offer of £270,000 for the whole of the share capital of B Ltd and it was accepted. Payment was made in cash. The fair value placed on the tangible fixed assets of B Ltd for the purposes of the merger was £148,000. The balance sheets of the two companies immediately before the merger on 31 December 20X3 were:

	<i>A Ltd</i>		<i>B Ltd</i>	
	£000	£000	£000	£000
Tangible fixed assets		400		120
Current assets	450		200	
Less Current liabilities	(130)		( 90)	
		<u>320</u>		<u>110</u>
		<u>720</u>		<u>230</u>
Ordinary shares £1		500		150
Revenue reserves		<u>220</u>		<u>80</u>
		<u>720</u>		<u>230</u>

The balance sheets of A Ltd and of the group immediately following the merger were:

**Balance Sheet at 31 December 20X3**

	<i>A Ltd</i>		<i>Group</i>	
	£000	£000	£000	£000
Fixed assets				
Intangible (goodwill)	–		(W2) 12	
Tangible	400		(W3) 548	
Investments	<u>270</u>		—	
		670		560
Current assets	(W1) 180		(W4) 380	
Less Current liabilities	(130)		(220)	
		<u>50</u>		<u>160</u>
		<u>720</u>		<u>720</u>
Share capital		500		500
Reserves		<u>220</u>		<u>220</u>
		<u>720</u>		<u>720</u>
<i>Workings (£000):</i>				
(W1) Original current assets 450 – cash paid 270 = 180				
(W2) Paid for shares				270
Less Net assets of B at takeover date			230	
Add Increase in value of fixed assets of B to a 'fair value' 148 – 120 =			<u>28</u>	
				(258)
Goodwill (intangible fixed asset)				<u>12</u>
(W3) Fixed assets A Ltd 400 + B Ltd 148 = 548				
(W4) A Ltd (after payment) 180 + B Ltd 200 = 380				

Now, let's look at how merger accounting is performed and, thus, at how it differs from acquisition accounting.

**25.3 Merger accounting method**

- 1 Shares issued by the parent to 'pay' for the acquisition of another company are merely the means of achieving the merger in a technical sense. No payment is received for the shares issued and all shares issued are issued at their nominal value *not* their market value.

- Consequently, no share premium arises. The newly issued shares are shown in the parent's balance sheet (A Ltd) at nominal value, as an addition to issued share capital.
- 2 As mentioned in (1), no share premium arises so the cost of the investment in the parent's balance sheet (A Ltd) is the nominal value of shares issued. If the nominal value of the shares is not the same as the Stock Exchange or similar market valuation then, obviously, the 'true' value of the subsidiary is not shown in the 'cost' of the investment.
  - 3 Under merger accounting, all reserves are treated as if the 'new' organisation always existed. As a result, all dividends received by the parent (A Ltd) from the subsidiary (B Ltd) can be distributed in full by the parent, irrespective of whether they were earned pre- or post-merger. All the subsidiary's reserves are included in the consolidated balance sheet.
  - 4 The assets of the subsidiary are not revalued at 'fair value' at the date of merger. It would not make sense to revalue B Ltd's assets while leaving A Ltd's assets valued at the old amounts. Sometimes, however, under the 'new entity' method of merger, described in Section 25.1, both companies revalue their assets.
  - 5 Where the total nominal value of the shares issued by the parent, A Ltd, is more than the total nominal value of the shares of B Ltd, the difference is deducted from group reserves. If the total is less, then the shortfall becomes a *non-distributable* group reserve.
  - 6 Any existing balance on the share premium account or capital redemption reserve of the new subsidiary undertaking should be brought into the consolidated balance sheet by being shown as a *movement on other reserves*.
  - 7 Merger expenses should be charged to the profit and loss account of the combined entity at the effective date of the merger, as *reorganisation or restructuring expenses*.

Let's look at an example.

### Exhibit 25.3

Taking the same companies, A Ltd and B Ltd, as in Exhibit 25.2 but, instead of a cash offer of £270,000, the offer is 200,000 ordinary shares of £1 each which, at that time, had at a stock exchange value of £270,000.

The balance sheets of A Ltd and the group immediately after the merger are now:

	A Ltd		Group	
	£000	£000	£000	£000
Fixed assets				
Tangible	400		520	
Investments	<u>200</u>		—	
		600		520
Current assets	450		650	
Less Current liabilities	<u>(130)</u>		<u>(220)</u>	
		<u>320</u>		<u>430</u>
		<u>920</u>		<u>950</u>
Share capital		700		700
Reserves		<u>220</u>		<u>250</u>
		<u>920</u>		<u>950</u>
Workings:				
Reserve A Ltd		220		
B Ltd		<u>80</u>		
				300
Less Excess of nominal value shares issued by A Ltd over those exchanged of B Ltd, i.e. 200 – 150				( 50)
				<u>250</u>

Spend a couple of minutes comparing these balance sheets with those shown after the merger in Exhibit 25.2. You should note how merger accounting makes the group appear more wealthy than acquisition accounting. Let's now consider some of the other apparent advantages to a group that adopts merger accounting.

## 25.4 The advantages of merger accounting to a group

Merger accounting has a number of advantages from the perspective of the investing group:

- 1 The subsidiary's pre-acquisition reserves and pre-acquisition results are included in the consolidated financial statements, as well as those relating to the post-acquisition period. Consequently, the group can appear to the casual reviewer as more profitable than it was. However, as the amounts relating to pre- and post-merger must be disclosed in the notes to the financial statements, this is not as great an advantage as it may appear.
- 2 The parent undertaking can appear misleadingly successful if it is in receipt of pre-acquisition dividends which it treats as revenue income. (The investment is normally recorded at the nominal value of the holding company shares issued, plus any other consideration given, and for obvious reasons, is not normally reduced to account for the pre-acquisition distribution.)
- 3 Because they do not have to be included at their fair values at the date of the merger, assets are likely to be undervalued (compared with equivalent situations where *acquisition accounting* has been applied), providing an opportunity for instant earnings by selling assets so realising unrealistically high gains on sale and, therefore, resulting in misleadingly higher returns on capital.
- 4 Lower depreciation charges (because the assets are at lower balance sheet values) and an absence of goodwill will result in a correspondingly higher return on capital employed than would be the case were the acquisition accounting approach adopted.
- 5 Most importantly, all the pre-acquisition distributable reserves of the companies involved are available for distribution to the group's shareholders (though this may be subject to a reduction if the nominal value of the new shares exceeds the nominal value of the shares received).

However, despite these apparent advantages, the merger method has only been used infrequently in the UK and, following the issue of FRS 6 in 1994, current and future adoption of merger accounting in the UK is likely to be very rare indeed. Indeed, once all UK entities adopt IFRS 3, merger accounting will cease to be used.

## 25.5 Final points concerning FRS 6

According to FRS 6, when *merger accounting* is used, it is not necessary to adjust values of the subsidiaries' assets and liabilities to fair values. However, adjustments must still be made if they are necessary to achieve uniformity of accounting policies across the group.

Remember that in a *merger* there is no such thing as *pre-acquisition profits*. The distribution of pre-acquisition profits is not restricted in the way it is under *acquisition accounting*.

Finally, while *acquisition accounting* will generally give rise to goodwill (positive or negative), *merger accounting* never does – not because a difference cannot arise between the consideration given and the value received, but because such differences arising under the merger accounting approach do not conform to the fair-value-based definition of goodwill given in FRS 10.

### Activity 25.1

Given a choice, why would most companies prefer to adopt acquisition accounting?

## 25.6 IFRS 3: Business combinations

The main difference between IFRS 3 and FRS 6 is that the international standard prohibits the use of merger accounting. This can only be a positive step towards the portrayal of a true and fair view in consolidated financial statements. While companies listed on the Stock Exchange must now comply with IFRS 3, there are still many smaller unlisted companies in the UK for which FRS 6, *not* IFRS 3 applies. As a result, it will be some time before merger accounting ceases to be used in the UK.

### Learning outcomes

You should now have learnt:

- 1 Under FRS 6, merger accounting should be used only when certain conditions are met, and must be used when they are.
- 2 Otherwise, acquisition accounting should be used.
- 3 IFRS 3 prohibits use of merger accounting.
- 4 Under merger accounting, assets and liabilities do not require to be stated at their fair values on acquisition.
- 5 Goodwill can arise only under acquisition accounting.
- 6 No distinction is made between pre- and post-acquisition reserves under merger accounting.
- 7 That double entry follows the rules of the accounting equation.

### Answer to activity

- 25.1** It may not be so much that they would prefer to adopt acquisition accounting as that they have little choice but to do so. Merger accounting really does involve companies merging. Effectively, they must lose their independent identities to merge – the last question on the flowchart shown in Exhibit 25.1 highlights this point. Other questions on the flowchart provide further evidence of this. It is most unlikely that doing so would be desirable to all parties and is, in itself, sufficient to prevent merger accounting from being a feasible option, *if they truly had a choice*. Nevertheless, if the companies involved really were engaged in a merger, they would probably prefer to adopt merger accounting as the advantages of doing so appear far greater than the advantages of adopting acquisition accounting.

### Review questions

- 25.1** Large plc, a manufacturer and wholesaler, purchased 600,000 of the 800,000 issued ordinary shares of a smaller company, Small Ltd, on 1 January 20X5 when the retained earnings account of Small Ltd had a credit balance of £72,000.

The latest accounts of the two companies are:

**Summary Profit and Loss Accounts for the year to 30 September 20X6 (£000s)**

	<i>Large plc</i>	<i>Small Ltd</i>
Credit sales	10,830	2,000
Cost of sales and production services	( 3,570)	(1,100)
Gross profit	7,260	900
Administrative and marketing expenses (including depreciation, audit fee and directors' remuneration)	(2,592)	(180)
Operating profit	4,668	720
Dividend received from Small Ltd	180	—
Net profit before tax	4,848	720
Taxation	2,304	200
Net dividend	<u>2,400</u>	<u>240</u>
	(4,704)	(440)
Profit retained	144	280
Brought forward from last year	1,200	192
Carried forward to next year	<u>1,344</u>	<u>472</u>

**Summary Balance Sheets at 30 September 20X6 (£000)**

	<i>Large plc</i>	<i>Small Ltd</i>
Intangible assets:		
Research and development:		
— pure research	20	—
— applied research	30	—
— development	180	—
Goodwill – purchased (at cost less amounts written off)	48	—
— unpurchased	50	—
Fixed assets at cost less depreciation	3,920	728
Investment in Small Ltd	525	—
Current account with Large plc	—	75
Stock	594	231
Debtors	2,250	370
Bank	99	24
	7,716	1,428
Less Current account with Small Ltd	( 75)	( —)
Creditors for goods and services	( 297)	( 156)
	<u>7,344</u>	<u>1,272</u>
Share capital	6,000	800
Retained earnings	<u>1,344</u>	<u>472</u>
	<u>7,344</u>	<u>1,272</u>

**Notes:**

The intangible asset section of the balance sheet of Large plc has not yet been amended prior to consolidation to take account of the provisions of the Companies Acts or the recommendations contained in accounting standards regarding intangible assets.

The stock of Large plc contained goods valued at £108,000 purchased from Small Ltd at production cost plus 50 per cent.

**Required:**

- Prepare the consolidated profit and loss account of Large plc and its subsidiary Small Ltd for the year to 30 September 20X6 using the acquisition (purchase) method of consolidation.
- Prepare the consolidated balance sheet of Large plc and its subsidiary Small Ltd at 30 September 20X6 using the acquisition method of consolidation.
- What would the reserves of the group be if the merger method of consolidation were used instead of the acquisition method? Briefly explain why there is a difference between the values of the reserves arising from the two methods of consolidation.

(Institute of Chartered Secretaries and Administrators)



# Standards covering subsidiary and associated undertakings and joint ventures

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the importance of the control concept
- describe the circumstances under which a parent/subsidiary relationship is recognised
- describe the conditions whereby companies are exempt from preparing consolidated financial statements
- describe the conditions under which a subsidiary company should not be included in the consolidated financial statements
- describe what to do when a company has investments in associated undertakings but does not prepare consolidated financial statements because it has no investments in subsidiary undertakings

## Introduction

In this chapter, you'll learn about the various accounting standards that regulate the preparation of accounting information relating to subsidiaries and associate undertakings. These regulations have changed considerably in recent years and are now more standardised than in the past, enabling far greater comparability than was previously the case.

### 26.1 Background

Over the last few years, the whole field of accounting relating to consolidated financial statements and groups in general has undergone considerable changes. FRS 2 was introduced to clarify and extend business operations for which consolidated financial statements are needed, and to define those situations where exemptions from their preparation should apply; FRS 9 updated the requirements concerning associates, and introduced regulations relating to joint ventures; and FRS 10 replaced SSAP 22 as the accounting standard relating to goodwill. The relevant international accounting standards relating to FRS 2 are IAS 27 and IFRS 3. For FRS 9, they are IAS 28 and IAS 31.

This chapter considers the UK standards and then looks briefly at the equivalent international standards.

## 26.2 FRS 2: Accounting for subsidiary undertakings

While the application of FRS 2 must comply with the requirements of the Companies Acts, FRS 2 redefines those legal requirements by reducing the number of alternatives available and making the requirements and definitions more precise, thereby improving the standardisation and hence comparability of financial statements.

The main differences between current regulations and those of 10–15 years ago are:

- (a) the definitions of parents and subsidiaries are now based upon control, rather than on ownership;
- (b) instead of ‘company’, the term ‘undertaking’ is used in the regulations. This means that unincorporated bodies are now covered;
- (c) there are now more exemptions available to companies and groups that do not wish to prepare consolidated financial statements.

In the remainder of this chapter, the more important provisions of the standards applicable to groups are discussed. As Chapters 16–25 have already incorporated the mechanics of implementing FRS 2, those points will not be looked at again. While this chapter is concerned with the other important aspects of FRS 2 and of FRS 9, it does not cover every detail. Such detail would be needed only at a later stage in your studies.

### Activity 26.1

Why do you think control is now the key factor in determining the relationship between related companies, rather than ownership?

## 26.3 Parent and subsidiary relationship

As you have learnt over the last six chapters, the main test as to the existence of a parent/subsidiary relationship is one of control. A group consists of all the various enterprises, including unincorporated businesses as well as companies, under the control of the parent. In fact, control and ownership usually go together, but the exceptions to this general premise (whereby control could exist even when ownership was less than 50 per cent) led to a tightening up of the definition of control so that ownership became one of, rather than only indicator of a parent/subsidiary relationship.

FRS 2 states that an undertaking is a parent undertaking of another undertaking (this being the subsidiary undertaking) if any of the following can apply to it:

- 1 It holds a majority of the voting rights (i.e. shares carrying a right to vote) in the undertaking.
- 2 It is a member of the undertaking and has the right to appoint or remove directors holding a majority of the voting rights at meetings of the board on substantially all matters.
- 3 It has the right to exercise a ‘dominant influence’ over the undertaking.

This could be by virtue of provisions in the undertaking’s memorandum or articles, or by a control contract which must be in writing and be legally valid. ‘Dominant influence’ means that influence that can be exercised to achieve the operating and financial policies desired by the holder of the influence, notwithstanding the rights or influence of any other party. In other words, it has the right to give directions as to the functioning of the operating and financial policies of the undertaking, whether or not they are to the benefit of that undertaking.

- 4 It is a member of the undertaking and alone controls a majority of the voting rights by agreement with other members.
- 5 It has a ‘participating interest’ (i.e. an interest in the shares of the undertaking which is held for the long term for the purpose of securing a contribution to its activities by the exercise of

control or influence arising from that interest – this would normally be a holding of more than 20 per cent of the shares of the undertaking) and either (a) it exercises a dominant influence over the undertaking, or (b) it and the undertaking are managed on a unified basis (i.e. where the whole of the operations of the undertakings are integrated and they are managed as a single unit).

- 6 A parent undertaking is also treated as the parent undertaking of the subsidiary undertakings of its subsidiary undertakings.

Points 2 to 5 are the more recent tests introduced by FRS 2.

## 26.4 Exemption from preparing consolidated financial statements

The Companies Act 1989 contains provisions which exempt some groups from having to prepare consolidated financial statements. Exactly the same provisions are contained in FRS 2. The main points contained in the Act are:

- 1 Small and medium-sized groups can claim exemption from the requirement to prepare consolidated financial statements on the grounds of size. In order to do so, they must comply with at least two of the following criteria:

	<i>Small</i>	<i>Medium-sized</i>
Aggregate turnover not more than	£2.8 million net/ £3.36 million gross	£11.2 million net/ £13.44 million gross
Aggregate gross assets not more than	£1.4 million net/ £1.68 million gross	£5.6 million net/ £6.72 million gross
Aggregate employees not more than	50	250

(This exemption does not apply to groups whose members include a plc, a bank, an insurance company, or an authorised person under the Financial Services and Markets Act 2000.)

However, they must choose between filing *full* consolidated financial statements or filing *individual* company financial statements.

- 2 Except for companies who have any of their securities listed on any stock exchange in the European Union, any parent undertaking that is itself a wholly-owned subsidiary whose immediate parent is established in the European Union *does not have to prepare consolidated financial statements*.

Individual company financial statements must still be prepared for the parent and they must include the name of its own parent undertaking; the country where its own parent is incorporated, if it is not the UK; and the fact that it is exempt from preparing group financial statements. As well as this, a copy of the audited consolidated financial statements of its own parent must be filed with its own individual company financial statements. (This exemption can be overturned by the minority shareholders who can require that consolidated financial statements are prepared.)

- 3 If all of the subsidiary undertakings are permitted or required to be excluded from consolidation under the Companies Acts, consolidated financial statements are not required.

## 26.5 Exemption from the inclusion of a subsidiary in consolidated financial statements

There are three grounds for exclusion of a subsidiary given in FRS 2:

- (a) where severe long-term restrictions substantially hinder the rights of the parent undertaking over the assets or management of the subsidiary undertaking;

- (b) where the interest in the subsidiary undertaking is held exclusively for subsequent resale; and
- (c) where activities are so different from those of other undertakings to be included in the consolidation that their inclusion would be incompatible with the obligation to give a true and fair view.

A subsidiary that is excluded on the grounds of long-term restriction (i.e. (a) above) should be treated as a fixed asset investment. However, if the parent still exercises significant influence it should be treated as an associated undertaking.

Subsidiaries excluded on the grounds that they are being held exclusively for resale should be included as current assets at the lower of cost and net realisable value.

Where exclusion is due to the activities of the subsidiary being so different from those of other undertakings to be included in the consolidation that their inclusion would be incompatible with the obligation to give a true and fair view, they should be accounted for using the equity method.

## 26.6 IAS 27: Consolidated and separate financial statements

The international standard is similar to FRS 2, any differences between them being likely to be eliminated as UK and international standards converge.

## 26.7 FRS 9: Associates and joint ventures

FRS 9 encompasses **associate undertakings** and **joint ventures**, which it defines as entities in which the reporting entity holds an interest on a long-term basis and which are jointly controlled by the reporting entity and one or more other venturers under a contractual arrangement.

FRS 9 introduced the '**gross equity**' method of accounting, a form of equity accounting (which you will learn about in the next section) applicable to joint ventures under which the investor's share of the aggregate gross assets and liabilities of the joint venture is shown on the face of the balance sheet and the investor's share of the joint venture's turnover is noted in the profit and loss account.

Previous to FRS 9, B Ltd would be considered as an associate of A Ltd if A Ltd could *significantly* influence the financial and operating decisions of B Ltd. FRS 9 amended this definition of an associate to include entities only where the investing entity *exercises* a significant influence, rather than one that is *in a position to exercise* significant influence. At the same time, the amount of disclosure required in the financial statements was increased.

### Activity 26.2

Why do you think this change in the definition of an associate was made?

## 26.8 Equity accounting

When a company has invested in an associate undertaking, ordinary investment accounting (which includes only the income from dividends in the investing company's profit and loss account) is not appropriate. Instead, the investing company's full share of the profit (whether or not distributed as dividends) or loss, is incorporated in the investing company's financial statements. This approach is known as '**equity accounting**'.

Equity accounting is, therefore, a modified form of consolidation that requires similar adjustments to be made as apply under FRS 2: *Accounting for subsidiary undertakings* for full consolidations prepared under the principles of acquisition accounting.

In the consolidated profit and loss account, the investing company includes its full share of the earnings of the associate, whether or not the associate has distributed the earnings as dividends. In the consolidated balance sheet, the investment is shown at cost, adjusted each year by the share of retained profits belonging to the investor, subject to an adjustment for any goodwill arising on acquisition that has been written off.

We will shortly see how this is carried out. You will learn that there are major differences between equity accounting and consolidation accounting of a subsidiary's results. For example, under acquisition accounting, the group would take credit for the whole of the turnover, cost of sales, etc. and then make a one-line adjustment to remove any minority interest. With equity accounting, the associated undertaking's turnover, cost of sales, etc. are not amalgamated with those of the group. Instead, only the items concerned with the group's share of the associated undertaking's profit or loss are included.

As it would be quite rare for a company with investments in associate undertakings not to have subsidiaries, we will use an example that demonstrates how to include the relevant equity accounting-based information into a set of consolidated financial statements.

### Effect upon the consolidated profit and loss account

*Take out:*

(a) dividends received or receivable from the associate.

*Include instead the group's share of the associate's:*

(b) pre-tax profit

(c) taxation charge

(d) post-acquisition retained profits brought forward.

### Effect upon the consolidated balance sheet

*Rather than* the cost of the investment

*Show instead* the cost of the investment

*plus*

the group's share of associate's post-acquisition retained profit

Exhibit 26.1 shows how an associated undertaking's results are incorporated into a set of consolidated financial statements.

**Exhibit 26.1**

A Ltd is a holding company with subsidiaries. It also has 25 per cent of the equity share capital of B Ltd. This was bought for £100,000 three years ago when B Ltd had reserves (retained profits) of £20,000.

**Profit and Loss Accounts for the year ending 31 December 20X3**

	<i>A Ltd &amp; Subsidiaries (consolidated)</i>		<i>B Ltd (associated co.)</i>	
	<i>£000</i>	<i>£000</i>	<i>£000</i>	<i>£000</i>
Turnover		540		200
Cost of sales		(370)		(130)
Gross profit		170		70
Distribution costs	20		3	
Administrative expenses	<u>40</u>		<u>7</u>	
		( 60)		( 10)
		110		60
Dividends receivable from B Ltd	(A)	<u>10</u>		—
Profit on ordinary activities before taxation		120	(B)	60
Tax on profit on ordinary activities		( 28)	(C)	( 16)
Profit on ordinary activities after taxation		92		44
Retained profits from last year		<u>43</u>		<u>40</u>
		135		84
Proposed dividends		( 60)		( 40)
Retained profits carried to next year		<u>75</u>		<u>44</u>

**Balance Sheet as at 31 December 20X3 (abbreviated)**

	<i>£000</i>	<i>£000</i>
Fixed assets	145	130
Investment in B Ltd at cost	100	—
Net current assets	<u>180</u>	<u>114</u>
	<u>425</u>	<u>244</u>
Share capital (ordinary shares)	350	200
Reserves	<u>75</u>	<u>44</u>
	<u>425</u>	<u>244</u>

We can now prepare the entries to incorporate B Ltd into the consolidation. As you have just learnt, the adjustments to be made are:

*Take out:* (A) Dividends receivable

*Include:* (B) Group share of pre-tax profit

(C) Group share of taxation

(D) Group's share of post-acquisition retained profit brought forward.





The answer is:

**A Ltd Group**  
**Consolidated Profit and Loss Account for the year ending 31 December 20X3**

	£000	£000
Turnover		540
Cost of sales		(370)
		<u>170</u>
Distribution costs	20	
Administrative expenses	<u>40</u>	
		( 60)
		<u>110</u>
Share of profit of associated undertaking (W1)		(B) 15
Profit on ordinary activities before taxation		<u>125</u>
Tax on profit on ordinary activities (W2)		(C) ( 32)
Profit on ordinary activities after taxation		<u>93</u>
Retained profits from last year (W3)		(D) <u>48</u>
		<u>141</u>
Proposed dividend		( 60)
Retained profits carried to next year		<u><u>81</u></u>

**Consolidated Balance Sheet as at 31 December 20X3**

	£000
Fixed assets	145
Investment in B Ltd (W4)	106
Net current assets	<u>180</u>
	<u>431</u>
Share capital	350
Reserves (W5)	<u>81</u>
	<u><u>431</u></u>

**Workings:**(W1) 25% of profit before taxation of B Ltd  $\times$  £60 = £15

(W2) A £28 + 25% of B £16 = £32

(W3) A £43 + 25% of B's post-acquisition profits (£40 – £20) £20 = £48

(W4) Cost of 25% share in B = 100

Add Retained profits B c/d

44

Less Pre-acquisition profits

(20)

Post-acquisition profits

24

25% share

6106

(W5) Reserves A

75

Add 25% of post-acquisition profit of B (see W4)

681**26.9****Investing companies without subsidiaries**

If no consolidated financial statements are produced by an investing company and that company is not exempt from preparing consolidated statements, or would not be if it had subsidiaries, a separate profit and loss account (or a supplement to the investing company's own profit and loss account) should be prepared showing the information that would have been included in respect of the associated undertaking had consolidated financial statements been prepared. Similar requirements apply to the balance sheet. An example of a supplementary statement incorporating the results of associated undertakings is shown in Exhibit 26.2.

**Exhibit 26.2**

Example of a profit and loss account of a company without subsidiaries:

<b>Profit and Loss Account of an Investing Company</b>		
	<i>£000</i>	<i>£000</i>
Turnover		2,000
Cost of sales		(1,400)
Gross profit		600
Distribution costs	175	
Administrative expenses	125	
		(300)
Profit on ordinary activities before taxation		300
Tax on profit on ordinary activities		( 85)
Profit on ordinary activities after taxation		215
Dividends – proposed		( 80)
Amount set aside to reserves		135
Supplementary statement incorporating results of associated undertakings:		
		<i>£000</i>
Share of profits less losses of associated undertakings		50
Less Tax		( 15)
Share of profits after tax of associated undertakings		35
Profit on ordinary share activities after taxation (as above)		215
Profit attributable to members of the investing company		250
Dividends – proposed		( 80)
Net profit retained (£35,000 by associated undertakings)		170

Note: The earnings per share figure would be based on £250,000.

**26.10 The control concept**

The control concept underlies the presentation of consolidated financial statements for a group as a single economic entity. While the list given in Section 26.3 can be used to identify a parent/subsidiary relationship, it may result in more than one undertaking being classified as the parent. However, FRS 2 states that **control can only be held by one parent**, and that the control that identifies undertakings as parent and subsidiary undertakings should be distinguished from shared control, for example as in a joint venture. If more than one undertaking is identified as the parent, their interests in the subsidiary are, in effect, interests in a joint venture, and no parent/subsidiary relationship exists.

On the other hand, one or more of these parents may exercise a non-controlling but significant influence over the company in which it has invested. In that case it would be appropriate to account for it as an associate undertaking.

**26.11 IAS 28 and IAS 31**

While FRS 9 deals with both associate undertakings and joint ventures, each of these topics has its own international standard: IAS 28 (*Investments in associates*) and IAS 31 (*Financial reporting of interests in joint ventures*).



The definition of associate differs slightly, in that IAS 28 requires that only the power to exercise significant influence exists, whereas FRS 9 requires that significant influence is exercised.

The definition of joint venture also differs between IAS 31 and FRS 9. IAS 31 requires that joint control exists. FRS 9 requires that neither party can exercise sole control over the financial or operating decisions of the venture.

IAS 31 permits proportionate consolidation. FRS 9 does not. Equity accounting is permissible under IAS 31 and the gross equity method is required by FRS 9.

These differences are likely to be eliminated as the convergence of UK and international standards proceeds.

## Learning outcomes

You should now have learnt:

- 1 The existence of a parent/subsidiary relationship depends upon whether the 'parent' undertaking can exercise *dominant* influence over the 'subsidiary' undertaking.
- 2 The existence of a parent/associate relationship depends upon whether the 'parent' undertaking actually exercises *significant* influence over the 'associate' undertaking.
- 3 There are some circumstances where groups are exempted from the preparation of consolidated financial statements.
- 4 Equity accounting is used when including associate undertakings in consolidated financial statements.
- 5 When a company has investments in associated undertakings but does not prepare consolidated financial statements because it has no investments in subsidiary undertakings, it should prepare a supplement to its financial statements detailing the information that would have been included in respect of the associated undertaking had consolidated financial statements been prepared.
- 6 Subsidiary undertakings can have only one parent; however, more than one parent may have a significant influence over an associated undertaking.

## Answers to activities

- 26.1** Control is far more all-encompassing. Control in some cases can be exercised with very little ownership. It depends entirely upon the circumstances and may, in fact, depend on contractual agreements, as between lender and borrower, rather than equity ownership. By shifting the emphasis from ownership to control, the substance of the relationship is identified as the main deciding factor. As a result, parent/subsidiary relationships (and parent/associate relationships) are much more realistically defined, thus providing a more meaningful basis for the preparation of group financial statements.
- 26.2** Associate undertakings are those over which a *significant* influence is exerted. They are only marginally different, in terms of control by the investing undertaking, from subsidiaries, for which a *dominant* influence is the key. Associate undertakings are clearly part of the group of companies in which they are given the status of 'associate undertaking'. Hence, it is appropriate to include their results under the group operating profit.

## Review questions

**26.1** Q plc has three subsidiaries: L Ltd, M Ltd, and N Ltd. All three were acquired on 1 January at the start of the financial year which has just ended. Q has a 55 per cent, 70 per cent and 95 per cent holding respectively and holds a majority of the voting equity in L and M. It has changed the composition of both these companies' boards since they were acquired. However, despite its 95 per cent holding in N Ltd, it has only a 45 per cent holding of the voting equity and has so far failed in all its attempts to have a director appointed to the board. How should these three investee companies be treated in the Q group consolidated financial statements?

**26.2** At the end of 20X5, a parent company, P plc, with one subsidiary had a holding representing 10 per cent of the equity of R Ltd, a clothing company. It had cost £80,000 when purchased at the start of 20X4. At the time of that investment, R Ltd had net assets of £560,000 which increased to £840,000 by the end of that year. At the start of the current year, the investment was increased by a further 11 per cent of the equity at a cost of £110,000.

**Required:**

- How would the investment be shown in the financial statements if it were treated as a *trade investment*, i.e. as neither an associate nor as a subsidiary?
- How would the investment be shown in the financial statements if it were treated as an *associated undertaking*?

**26.3A** Relevant balance sheets as at 31 March 20X4 are set out below:

	Jasmin (Holdings) plc £000	Kasbah plc £000	Fortran plc £000
Tangible fixed assets	289,400	91,800	7,600
Investments			
Shares in Kasbah (at cost)	97,600		
Shares in Fortran (at cost)	8,000		
	<u>395,000</u>		
Current assets			
Stock	285,600	151,400	2,600
Cash	319,000	500	6,800
	<u>604,600</u>	<u>151,900</u>	<u>9,400</u>
Creditors: amounts falling due within one year	(289,600)	(238,500)	(2,200)
Net current assets	<u>315,000</u>	<u>(86,600)</u>	<u>7,200</u>
Total assets less current liabilities	<u>710,000</u>	<u>5,200</u>	<u>14,800</u>
Capital and reserves:			
Called-up share capital			
Ordinary £1 shares	60,000	20,000	10,000
10% £1 Preference shares		4,000	
Revaluation reserve	40,000		1,200
Profit and loss reserve	<u>610,000</u>	<u>(18,800)</u>	<u>3,600</u>
	<u>710,000</u>	<u>5,200</u>	<u>14,800</u>

You have recently been appointed chief accountant of Jasmin (Holdings) plc and are about to prepare the group balance sheet at 31 March 20X4. The following points are relevant to the preparation of those accounts.

- Jasmin (Holdings) plc owns 90 per cent of the ordinary £1 shares and 20 per cent of the 10 per cent £1 preference shares of Kasbah plc. On 1 April 20X3 Jasmin (Holdings) plc paid £96 million for the ordinary £1 shares and £1.6 million for the 10 per cent £1 preference shares when Kasbah's reserves were a credit balance of £45 million.



- (b) Jasmin (Holdings) plc sells part of its output to Kasbah plc. The stock of Kasbah plc on 31 March 20X4 includes £1.2 million of stock purchased from Jasmin (Holdings) plc at cost plus one-third.
- (c) The policy of the group is to revalue its tangible fixed assets on a yearly basis. However, the directors of Kasbah plc have always resisted this policy, preferring to show tangible fixed assets at historical cost. The market value of the tangible fixed assets of Kasbah plc at 31 March 20X4 is £90 million. The directors of Jasmin (Holdings) plc wish to follow the requirements of FRS 2 'Accounting for Subsidiary Undertakings' in respect of the value of tangible fixed assets to be included in the group accounts.
- (d) The ordinary £1 shares of Fortran plc are split into 6 million 'A' ordinary £1 shares and 4 million 'B' ordinary £1 shares. Holders of 'A' shares are assigned 1 vote and holders of 'B' ordinary shares are assigned 2 votes per share. On 1 April 20X3 Jasmin (Holdings) plc acquired 80 per cent of the 'A' ordinary shares and 10 per cent of the 'B' ordinary shares when the profit and loss reserve of Fortran plc was £1.6 million and the revaluation reserve was £2 million. The 'A' ordinary shares and 'B' ordinary shares carry equal rights to share in the company's profit and losses.
- (e) The fair values of Kasbah plc and Fortran plc were not materially different from their book values at the time of acquisition of their shares by Jasmin (Holdings) plc.
- (f) Goodwill arising on acquisition is amortised over five years.
- (g) Kasbah plc has paid its preference dividend for the current year but no other dividends are proposed by the group companies. The preference dividend was paid shortly after the interim results of Kasbah plc were announced and was deemed to be a legal dividend by the auditors.
- (h) Because of its substantial losses during the period, the directors of Jasmin (Holdings) plc wish to exclude the financial statements of Kasbah plc from the group accounts on the grounds that Kasbah plc's output is not similar to that of Jasmin (Holdings) plc and that the resultant accounts therefore would be misleading. Jasmin (Holdings) plc produces synthetic yarn and Kasbah plc produces garments.

**Required:**

- (a) List the conditions for exclusion of subsidiaries from consolidation for the directors of Jasmin (Holdings) plc and state whether Kasbah plc may be excluded on these grounds.
- (b) Prepare a consolidated balance sheet for Jasmin (Holdings) Group plc for the year ending 31 March 20X4. (All calculations should be made to the nearest thousand pounds.)
- (c) Comment briefly on the possible implications of the size of Kasbah plc's losses for the year for the group accounts and the individual accounts of Jasmin (Holdings) plc.

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**26.4A** Huge plc acquired a holding of 600,000 of the 800,000 ordinary £1 shares of Large plc on 1 October 20X5 when the revenue reserves of Large stood at £320,000.

On 1 October 20X6, the directors of Medium plc agreed to appoint the commercial manager of Huge as one of its directors to enable Huge to participate in its commercial, financial and dividend policy decisions. In exchange, Huge agreed to provide finance to Medium for working capital. On the same day, Huge acquired its holding of 100,000 of the 400,000 ordinary £1 shares of Medium when the revenue reserves of Medium were £150,000. Three months later, the directors of Small plc, who supplied materials to Large, heard of the arrangement between Huge and Medium and suggested that they would be pleased to enter into a similar relationship. The board of Huge were interested in the proposal and showed their good faith by acquiring a 10 per cent holding in Small which at that time had a debit balance of £2,000 on its profit and loss account.

## Balance Sheets of the four companies on 30 September 20X7

	<i>Huge</i> £000	<i>Large</i> £000	<i>Medium</i> £000	<i>Small</i> £000
Property, plant and machinery	2,004	780	553	85
Investment in Large	650			
Investment in Medium	180			
Investment in Small	12			
Current a/c Medium	40			
Current a/c Small		10		
Stocks	489	303	72	28
Debtors	488	235	96	22
Bank/cash	45	62	19	5
	<u>3,908</u>	<u>1,390</u>	<u>740</u>	<u>140</u>
Less Liabilities due in one year: Creditors	( 318)	( 170)	( 90)	( 10)
	<u>3,590</u>	<u>1,220</u>	<u>650</u>	<u>130</u>
Ordinary share capital	2,400	800	400	80
Revenue reserves	1,190	420	210	40
Current a/c Huge			40	
Current a/c Large				10
	<u>3,590</u>	<u>1,220</u>	<u>650</u>	<u>130</u>

**Required:**

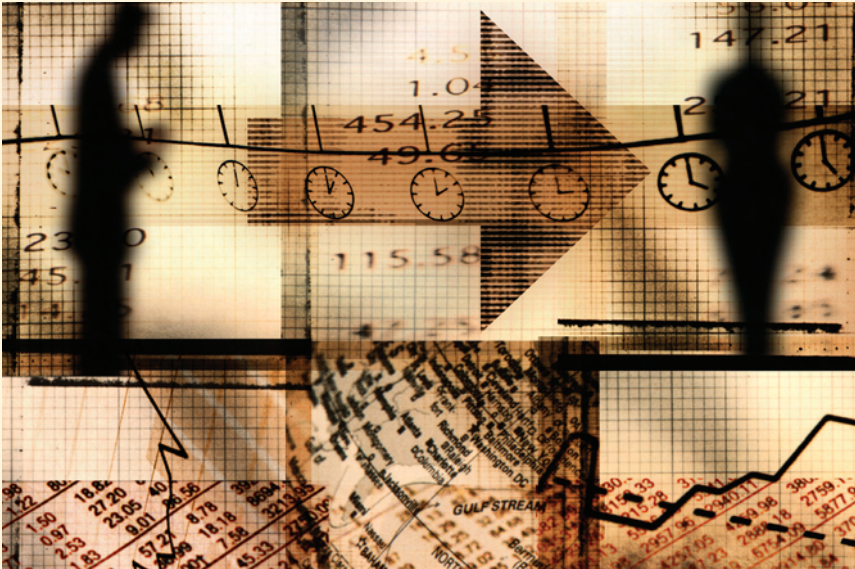
- (a) Identify which of the four companies should be included in a group consolidation, explaining how and why the treatment of one company in the consolidation may be different from another. Mention any appropriate accounting standards or legislation applicable.
- (b) Prepare the consolidated balance sheet of the group at 30 September 20X7 using the acquisition method of accounting.

(Institute of Chartered Secretaries and Administrators)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)



# FINANCIAL ANALYSIS



## Introduction

This part considers how accounting information is traditionally analysed and used.

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# Accounting ratios

## Learning objectives

After you have studied this chapter, you should be able to:

- describe various groups of accounting ratios, where they would be used, why they would be of interest, and to whom they would be of interest
- calculate a number of commonly used accounting ratios
- describe some of the difficulties that may arise in the calculation and interpretation of accounting ratios
- describe the dangers of overtrading and how ratio analysis can be used to detect it

## Introduction

This chapter revises what you learnt in *Business Accounting 1* concerning ratios and introduces some that are more commonly used. You will also learn about one of the main causes of small business failure, overtrading, and of how ratios can be used to minimise the risk of its occurring undetected.

### 27.1 Background

Without ratios, financial statements would be largely uninformative to all but the very skilled. By using ratios, financial statements can be interpreted and usefully applied to satisfy the needs of the reader, whether skilled or not.

The subject of accounting ratios and their use when analysing financial statements was introduced in *Business Accounting 1*. This chapter takes that material forward, re-examining it for reinforcement, and then developing it so as to increase the depth of your knowledge and understanding.

Information can be defined as ‘data organised for a purpose’. Information in financial statements is organised to enable users of the financial statements to draw conclusions concerning the financial well-being and performance of the reporting entity. In the case of the financial statements of companies, independent auditors review the manner in which the data has been presented and provide a filter mechanism attesting to the reliability of the information presented.

For partnerships and sole traders, there is generally no such independent review. However, as the financial statements are generally subject to review by the tax authorities, there is some justification in assuming that they are a reasonable reflection of reality and, in fact, many are prepared by qualified accountants who are governed by the ethical standards of their professional



body and so, while not required to do so by the business involved will, nevertheless, strive to produce financial statements that represent a ‘true and fair view’ of the performance and financial position of the business.

Yet, being ‘reasonably assured’ of the reliability of such financial statements is not generally sufficient for tax authorities. As a result, they often review the financial statements of partnerships and sole traders to determine whether there may be cause to doubt their reliability. One of the key instruments at their disposal is ratios, and they use ratio analysis to compare those found in the entity under review with those typically existing in that sector of the economy. Hence, through ratio analysis, factors characteristics and deviations from the norm can be identified that would not otherwise be apparent.

**Activity  
27.1**

What sort of ‘deviations from the norm’ do you think they may be looking for?

As you learnt in *Business Accounting 1*, ratio analysis can also be used to review trends and compare entities with each other. A number of financial analysis organisations specialise in this service, providing detailed ratio analysis of the financial statements of plcs to anyone who subscribes to their service, thereby enabling analysts to see, at a glance, how one company is performing, or how its financial structure compares with that of others of a similar nature.

This is fine for analysts, academic researchers and business competitors who can afford the services of such an organisation. However, there are a vast number of other stakeholders interested in analysing financial statements, including shareholders, lenders, customers, suppliers, employees and government agencies, not all of whom would either want this information, nor wish to pay for it. In many cases, each stakeholder group will be interested in different things, and so there is no definitive, all-encompassing list of points for analysis that would be useful to all the groups even if some organisation endeavoured to do so.

Nevertheless, it is possible to construct a series of ratios that together will provide all these groups with something that they will find relevant, and from which they can choose to investigate further, if necessary.

**Ratio analysis is, therefore, a first step in assessing the performance and financial position of an entity. It removes some of the mystique surrounding the financial statements and makes it easier to pinpoint items which would be interesting to investigate further.**

Exhibit 27.1 shows some categories of ratios and indicates some of the groups that would be interested in them. You will recall a similar list in *Business Accounting 1*. However, note that the term ‘solvency’ has been substituted for ‘liquidity’ in the list here. ‘Solvency’ is a broader term and more clearly indicative of precisely what we are trying to identify when we consider the ratios that fall within its group. **Despite ‘solvency’ being the more appropriate term, many examiners use the term ‘liquidity’ when referring to this group of ratios.**

**Exhibit 27.1**

<i>Ratio category</i>	<i>Examples of interested groups</i>
<b>Profitability</b>	Shareholders, management, employees, creditors, competitors, potential investors
<b>Solvency</b>	Shareholders, suppliers, creditors, competitors
<b>Efficiency</b>	Shareholders, potential purchasers, competitors
<b>Shareholder</b>	Shareholders, potential investors
<b>Capital structure</b>	Shareholders, lenders, creditors, potential investors

Let’s now revise the main features of each category of ratios.

## 27.2 Profitability

These measures indicate whether the company is performing satisfactorily. They are used, among other things, to measure the performance of management, to identify whether a company may be a worthwhile investment opportunity, and to determine a company's performance relative to its competitors.

There are a large number of these ratios. You will recall that we covered three in *Business Accounting 1* – *gross profit : sales*, *net profit : sales* and *return on capital employed*. We shall review them once more and add some others that are commonly used.

### Gross profit : Sales

If gross profit is £120,000 and sales are £480,000, the ratio would be 25 per cent. (This should not be confused with the gross margin : cost of sales ratio which compares the gross profit to the cost of sales which, in this case, would have a value of 33.33 per cent.)

### Net profit after tax : Sales

If net profit is £38,400 and sales are £480,000, the ratio would be 8 per cent. It indicates how much safety there is in the price, i.e. current prices could be reduced by up to 8 per cent without causing the company to make a loss. Of course, it is much more complex than this. As any student of economics knows only too well, if a commodity's price falls, generally demand for it rises. This could result in costs increasing (if unexpected demand has to be met in a hurry) or falling (as bulk discounts become available that were not previously obtainable owing to the lower level of demand). Nevertheless, as a general guide, it is a sensible indicator of safety, as well as an indicator of success.

While a high value for this ratio may suggest successful performance, it is not always the case. It is possible for selling prices to be so high that demand is reduced causing overall profitability to be significantly lower than it could be were a lower price being used. In this circumstance, the ratio would produce a high percentage, but performance would certainly not be as good as it ought to have been.

### Return on capital employed

An adequate return on capital employed is what many investors seek and is, therefore, one of the main reasons why people invest their money in a business in the first place. As a result, this is an extremely important ratio. First, let's remind ourselves of what we learnt in *Business Accounting 1*.

#### (i) Sole traders

In this chapter, we will use the average of the capital account as the figure for capital employed, i.e.  $(\text{opening balance} + \text{closing balance}) \div 2$ .

In businesses C and D in Exhibit 27.2 the same amount of net profit has been made, but the capitals employed are different.

**Exhibit 27.2****Balance Sheets**

	C £	D £
Fixed + Current assets – Current liabilities	<u>10,000</u>	<u>16,000</u>
Capital accounts		
Opening balance	8,000	14,000
Add Net profit	<u>3,600</u>	<u>3,600</u>
	11,600	17,600
Less Drawings	( 1,600)	( 1,600)
	<u>10,000</u>	<u>16,000</u>

Return on capital employed (ROCE) is:

$$\text{ROCE} = \frac{\text{Net Profit}}{\text{Capital employed}} \times 100$$

therefore

$$\frac{\text{C}}{\frac{3,600}{(8,000 + 10,000) + 2}} \times \frac{100}{1} = 40\% \quad \frac{\text{D}}{\frac{3,600}{(14,000 + 16,000) + 2}} \times \frac{100}{1} = 24\%$$

The ratio illustrates that **what is important is not simply how much profit has been made but how well the capital has been employed**. Business C has made far better use of its capital, achieving a return of £40 net profit for every £100 invested, whereas D has received only a net profit of £24 per £100.

**(ii) Limited companies**

There is no universally agreed definition of **capital employed** for companies. The main ones used are:

- (a) return on capital employed by ordinary shareholders
- (b) return on capital employed by all long-term suppliers of capital.

Let's now look at each of these:

- (a) In a limited company this is known as 'return on owners' equity' (ROOE) or, more commonly, 'return on shareholders' funds' (ROSF).

**From now on, we shall use the second of these terms, 'return on shareholders' funds', but you will need to remember that when you see 'return on owners' equity', it is the same as ROSF.**

The word 'return' is the net profit for the period. The term 'shareholders' funds' means the book value of all things in the balance sheet that describe the owners' capital and reserves. As the 'owners' are the holders of the *ordinary* share capital, shareholders funds = ordinary share capital + all reserves.

- (b) This is often known as 'return on capital employed' (ROCE). The word 'return' in this case means net profit + any preference share dividends + debenture and long-term loan interest. The word 'capital' means ordinary share capital + reserves + preference shares + debentures and other long-term loans.

Now, let's calculate ROSF and ROCE for P Ltd and Q Ltd. Q Ltd has issued debentures, so its ROSF and ROCE will not be the same. P Ltd's capital employed is sourced solely from shareholders' funds, so its ROSF and ROCE will be identical.

## Balance Sheets as at 31 December

	P Ltd		Q Ltd	
	£	£	£	£
	20X8	20X9	20X8	20X9
Fixed assets	5,200	5,600	8,400	9,300
Net current assets	2,800	3,400	1,600	2,700
	<u>8,000</u>	<u>9,000</u>	<u>10,000</u>	<u>12,000</u>
10% debentures	—	—	( 1,200)	( 1,200)
	<u>8,000</u>	<u>9,000</u>	<u>8,800</u>	<u>10,800</u>
Share capital (ordinary)	3,000	3,000	5,000	5,000
Reserves	5,000	6,000	3,800	5,800
	<u>8,000</u>	<u>9,000</u>	<u>8,800</u>	<u>10,800</u>

## Profit and Loss Accounts for years to 31 December 20X9

	P Ltd	Q Ltd
	£	£
Net profit	2,200	3,800
Dividends	(1,200)	(1,800)
	<u>1,000</u>	<u>2,000</u>

## Return on Shareholders' Funds (ROSF)

P Ltd	Q Ltd
$\frac{2,200}{(8,000 + 9,000) + 2} \times \frac{100}{1} = 25.9\%$	$\frac{3,800}{(8,800 + 10,800) + 2} \times \frac{100}{1} = 38.8\%$

## Return on Capital Employed (ROCE)

P Ltd	Q Ltd
Same as ROSF <sup>(Note 1)</sup> = 25.9%	$\frac{3,800 + 120^{(Note 2)}}{(10,000 + 12,000) + 2} \times \frac{100}{1} = 35.6\%$

**Note 1:** The return on capital employed by all long-term sources of capital (in Q Ltd's case, the shareholders' funds and the debentures) is the same as the ROSF in the case of P Ltd, as it has no debentures.

**Note 2:** The debenture interest (i.e. 10% of £1,200 = £120) must be added back, as it was an expense in calculating the £3,800 net profit.

To summarise: return on capital employed is one of the more awkward ratios to deal with. Unlike for example, the current ratio, there is no widely agreed definition for ROCE – even the ones given here are but examples of how it may be defined. Hence, care must be taken when comparing this ratio as calculated for one company and as reported by another 'so as to confirm that like is being compared with like'. Using the services of financial analysis organisations which use the same formulae to calculate the ratios of all the companies they consider is one way around this difficulty. Another is to ensure that the formula used by the companies with which comparison is being made is known and, where necessary, the ratio result is recalculated in order to bring it into line with the internally calculated ratio.

**Note:** A problem you face as a student is that you will never be quite sure what an examiner wants if the exam paper refers to this ratio. You should always write down the formula you are using on your exam script.

To avoid confusion, unless otherwise indicated by, for example, the examiner, for companies use the definition of ROCE given above. The ratio compares the profit earned (usually *before*

interest and tax) to the funds used to generate that return (often the total of shareholders' funds at the beginning of the accounting period plus long-term creditors – most simply defined as total assets minus current liabilities). If the profit before interest and tax was £40,000 and the opening capital employed shown in the balance sheet was £800,000 the return on capital employed would be 5 per cent.

**In theory, the higher the ratio, the more profitably the resources of the company have been used.**

### Return on share capital

In theory, the higher this ratio is, the more profitably the shareholders' investment in the company has been used. It is often used to compare a company's performance across accounting periods, rather than to make comparisons with the ROSC of other companies. As with ROCE, there are a number of different ways in which return on share capital may be calculated. One is to compare profit on ordinary activities before tax with share capital and reserves. For example, if profit on ordinary activities before tax was £40,000 and the share capital and reserves at the start of the accounting period were £720,000 the return on share capital (ROSC) would be 5.56 per cent.

### Net profit after tax : Total assets

Net profit after tax is compared with the total of all assets other than current assets, plus working capital (i.e. current assets less current liabilities). If working capital is £20,000 and all non-current assets total £820,000, total assets are £840,000. If net profit after tax is £30,000, the ratio is £30,000/£840,000, i.e. 3.57 per cent.

There are problems with the validity of this ratio: it is really concerned with the operating profit generated by the net assets. However, some items of expenditure, e.g. interest on debentures, will have been charged against the profit in arriving at the figure for profit after tax. Strictly speaking, these other payments to investors and creditors ought to be excluded from this ratio and so should be added back to arrive at the profit figure used in the ratio, otherwise the profit may be significantly understated, giving a less healthy view than would be appropriate to present.

In addition, intangible assets, such as goodwill, are included in the value of total assets used in the ratio. Many would argue that this is inappropriate, as there is not an agreed view on how such assets should be valued.

These issues result in variations of this ratio being used – some add back expenditure, some exclude all intangible assets, some don't – which may not be apparent if only the ratio result is available. As a result, intercompany comparisons may be misleading.

### Net operating profit : Operating assets

This is an alternative to the *net profit after tax : total assets* ratio. It takes the net profit before interest, taxes and dividends, and before inclusion of any investment income. This is then compared with the assets other than intangibles and investments outside the company. Working capital would be included, but bank overdrafts would be excluded from the current liabilities on the basis that they are not generally short term in nature. Assume that net operating profit before interest, tax and dividends is £36,000 and tangible fixed assets excluding investments made outside the company are £600,000, working capital is £20,000 and there is a bank overdraft of £5,000. The ratio is:

$$\frac{£36,000}{£625,000} = 5.76\%$$

## 27.3 Solvency

Being solvent means having sufficient resources to meet your debts when due. Your resources must be sufficiently liquid to do so, hence the frequent use of the term ‘liquidity’ when referring to this group of ratios. As you learnt in *Business Accounting 1*, the solvency of individuals is often performed through credit checks undertaken by credit rating agencies. Many lenders, such as banks, use a checklist of questions concerning financial status before they will lend or grant credit to a private individual. For companies, information can be purchased that indicates their solvency, i.e. whether they are liable to be bad credit risks. Such information is usually based, at least in part, upon ratio analysis of their financial statements.

When it comes to the solvency of a business, both its own ability to pay its debts when due *and* the ability of its debtors to pay the amount they owe to the business are of great importance. Ratio analysis that focuses upon solvency (or liquidity) of the business generally starts with a look at two ratios that are affected most by these two aspects of liquidity: the **current ratio** and the **acid test ratio**.

### Current ratio

The **current ratio** compares total current assets to total current liabilities and indicates whether there are sufficient short-term assets to pay the short-term liabilities. This ratio is so sector-dependent that it would be and is inappropriate to suggest a ratio result that may be seen generally as being the ‘norm’. Consequently, no such guidance will be given here. Rather, a set of issues to consider are offered below:

- 1 What is the norm in this industrial sector?
- 2 Is this company significantly above or below that norm?
- 3 If so, can this be justified after an analysis of the nature of these assets and liabilities, and of the reasons for the amounts of each held?

The ratio may be expressed as either a ratio to 1, with current liabilities being set to 1, or as a ‘number of times’, representing the relative size of the amount of total current assets compared with total current liabilities.

### Example

If total current assets are £40,000 and total current liabilities are £20,000, the current ratio could be expressed as either:

$$£40,000 : £20,000 = 2 : 1$$

or as:

$$\frac{£40,000}{£20,000} = 2 \text{ times}$$

### Acid test ratio

As with the current ratio, there is no point in suggesting a norm for the ratio result to expect. The only difference in the items involved between the two ratios is that the acid test ratio (or ‘quick’ ratio) does not include stock. Otherwise, it is identical to the current ratio, comparing current assets, excluding stock, with current liabilities. Stock is omitted as it is considered to be relatively illiquid, because it depends upon prevailing and future market forces and may be impossible to convert to cash in a relatively short time.

Many companies operate with acid test ratios below 1:1; that is, they have insufficient liquid assets to meet their short-term liabilities. The great majority of companies in this situation have no problem paying their creditors when due. Consideration of a simple example should explain how this is possible.

**Activity  
27.2**

The only difference between the current and acid test ratios is that stock is omitted from the acid test ratio. Why is it appropriate to remove stock from the analysis?

**Example**

If total current assets, including stock of £22,000, are worth £40,000 and total current liabilities stand at £20,000, the acid test ratio will be  $\text{£18,000} : \text{£20,000} = 0.9 : 1$  (or 0.9 times). This means that at the balance sheet date, had all current liabilities been due for payment, it would not have been possible to do so without converting some other assets (e.g. stock, or some fixed assets) into cash even though it would be unlikely that they could be converted quickly into cash without offering a discount on their true value. In other words, the company would have had to pay a premium in order to meet its obligations, clearly something it would not be able to do indefinitely.

However, the reality is generally that the current liabilities shown in the balance sheet are due for payment at varying times over the coming financial period and some, for example a bank overdraft, may not in reality ever be likely to be subject to a demand for swift repayment.

The current assets, on the other hand, are within the control of the company and can be adjusted in their timing to match the due dates for payment to creditors. They can be renewed many times before one or other of the current liabilities is due for payment. For example, debtors may be on a 10-day cycle while trade creditors are only paid after 90 days' credit has expired. Clearly, in this case, cash receipts from nine times the balance sheet debtors' figure could be received and available to meet the trade creditor figure shown in the balance sheet when it falls due.

As with the current ratio, the acid test ratio should be compared with the norms for the industrial sector, and then the underlying assets and liabilities should be considered to determine whether there is any cause for concern in the result obtained.

**Activity  
27.3**

If stock is removed from the analysis when calculating the acid test ratio, why isn't the figure for debtors also removed? Debtors can be just as difficult to turn into cash.

## 27.4 Efficiency ratios

Profitability is affected by the way that the assets of a business are used. If plant and machinery are used for only a few hours a day, the business is probably failing to utilise these assets efficiently. This may be because there is limited demand for the product produced. It could be due to the business restricting supply to maximise profitability per item produced. On the other hand, it could be that there is a shortage of skilled labour and that there is no one to operate the plant and machinery the rest of the time. Alternatively, it could be that the plant and machinery is unreliable, breaking down a lot, and that the limited level of use is a precautionary measure designed to ensure that production targets are met.

In common with all accounting ratios, it is important that the results of efficiency ratio computations are not treated as definitively good or bad. They must be investigated further through consideration both of the underlying variables in the ratios, and of the broader context of the business and its relation to the industrial sector in which it operates.

Efficiency ratios include:

### Asset turnover

Asset turnover is a measure of how effectively the assets are being used to generate sales. It is one of the ratios that would be considered when interpreting the results of profitability ratio analyses like ROCE, but is of sufficient importance to be calculated and analysed irrespective of its relevance to other ratios. The calculation involves dividing sales by total assets less current liabilities.

As a general guide, where a company's asset turnover is significantly lower than that of its competitors, it suggests there may be overinvestment in assets which could, in turn, make the company vulnerable to takeover by a company interested in selling off any surplus assets while otherwise retaining the business in its current form. However, considerable care must be taken when interpreting this ratio: the assets may be much newer than those of other companies; the company may use a lower rate of depreciation than its competitors; or the company may purchase its plant and machinery, whereas the industry norm is to lease them. On the other side of the ratio, the result may be high because, for example, selling prices are being suppressed in order to maximise volume.

### Stock turnover

Included in virtually every case where accounting ratios are being calculated, stock turnover measures the number of times (approximately) that stock is replenished in an accounting period. If average stock is £100,000 and cost of sales is £800,000, the stock turnover ratio would be 8 times. The ratio can also be expressed as a number of days – the number of days stock held. In this example, 365 would be divided by 8 producing a result of 45.6 days.

There are two major difficulties in computing the stock turnover ratio: if cost of sales is not available, it is tempting to use sales instead. This should not be done. Sales are expressed at selling prices; stock is expressed at cost price. Use of sales instead of cost of sales in the equation will not be comparing like with like.

In addition, there are at least three possible stock values that could be used: opening, closing and the average of these figures. The average figure is the more commonly used, but use of any of the three can be justified.

Whichever approach is taken, the result will, at best, be a crude estimate. Due to seasonality of the business, stock as shown in the balance sheet may not be representative of the 'normal' level of stock. However, it is still useful for comparing trends over time and should be used mainly for that purpose. The result it produces needs to be handled with care. A rising stock turnover may indicate greater efficiency; or it may be an indicator that stocks are being run down and that there may be problems in meeting demand in future. A falling stock turnover may indicate lower efficiency, perhaps with a build-up of obsolete stocks; or it could indicate that higher stock volumes are being held because stock purchasing has become more efficient and the higher stock levels are financially beneficial for the company. In addition, it is important not to overlook that any change in the ratio may have nothing to do with stock but, instead, may be due to changes in factors relating to the sales for the period.

### Debtor days

Debtor days indicates how efficient the company is at controlling its debtors. If debtors are £50,000 and sales £800,000, debtors are taking, on average, 22.8 days credit, i.e.



$$\frac{£50,000}{£800,000} \times 356 = 22.8$$

Strictly speaking, the two figures are not comparable. Debtors includes the VAT on sales; the figure for sales excludes VAT. However, the adjustment is not difficult to make if required for clarity.

As with stock, the amount shown in the balance sheet for debtors may not be representative of the 'normal' level of debtors. Nevertheless, this is generally a useful ratio to calculate and comparison with that of other companies in the same industrial sector may be very interesting. However, as with stock turnover, its strength lies in trend analysis between periods.

### Creditor days

The creditor days ratio indicates one aspect of how the company uses short-term financing to fund its activities, and further investigation will reveal whether or not the result found is due to efficiency. It is calculated by dividing creditors by purchases, and multiplying the result by 365. The purchases figure is not usually available in published financial statements, the cost of sales amount being used in its place. As with stock turnover and debtor days, its strength lies in trend analysis between periods.

## 27.5 Shareholder ratios

Shareholder ratios are those most commonly used by anyone interested in an investment in a company. They indicate how well a company is performing in relation to the price of its shares and other related items including dividends and the number of shares in issue. The ratios usually calculated are described below.

### Dividend yield

Dividend yield measures the real rate of return by comparing the dividend paid to the market price of a share. It is calculated as:

$$\frac{\text{Gross dividend per share}}{\text{Market price per share}}$$

### Earnings per share (EPS)

EPS is the most frequently used of all the accounting ratios and is generally felt to give the best view of performance. It indicates how much of a company's profit can be attributed to each ordinary share in the company. FRS 14: *Earnings per share* provides the formula to be used when calculating this ratio:

$$\frac{\text{Net profit or loss attributable to ordinary shareholders}}{\text{The weighted average number of ordinary shares outstanding during the period}}$$

### Dividend cover

Dividend cover compares the amount of profit earned per ordinary share with the amount of dividend paid, thereby showing the proportion of profits that could have been distributed and were. It differs from EPS only in having a different denominator. The formula is:

$$\frac{\text{Net profit or loss attributable to ordinary shareholders}}{\text{Net dividend on ordinary shares}}$$

### Price earnings (P/E) ratio

The P/E ratio relates the earnings per share to the market price of the shares. It is calculated as:

$$\frac{\text{Market price}}{\text{Earnings per share}}$$

and is a useful indicator of how the stock market assesses the company. It is also very useful when a company proposes an issue of new shares, in that it enables potential investors to better assess whether the expected future earnings make the share a worthwhile investment.

## 27.6 Capital structure

There are a number of ratios that can be used to assess the way in which a company finances its activities. One, creditor days, was referred to in the last section. The ratios discussed in this section differ in that they are longer-term in nature, being concerned more with the strategic rather than with the operational level of corporate decision making. Some of the more commonly analysed ratios of this type are described below.

### Net worth : Total assets

This ratio indicates the proportion of fixed and current assets that are financed by net worth (the total of shareholders' funds, i.e. share capital plus reserves). If fixed assets are shown at a value of £500,000, current assets £100,000 and net worth is £300,000, then 50 per cent of total assets are financed by shareholders' funds. As with many accounting ratios, it is the trend in this ratio between periods that is important.

### Fixed assets : Net worth

This ratio focuses on the longer-term aspects of the net worth: total assets ratio. By matching long-term investment with long-term finance it is possible to determine whether borrowing has been used to finance some long-term investment in assets. Where this has occurred, there may be a problem when the borrowing is to be repaid (as the fixed assets it was used to acquire cannot be readily converted into cash). Again, this ratio is of most use when the trend over time is analysed.

### Fixed assets : Net worth + long-term liabilities

This ratio focuses on whether sufficient long-term finance has been obtained to meet the investment in fixed assets.

### Debt ratio

This ratio compares the total debts to total assets and is concerned with whether the company has sufficient assets to meet all its liabilities when due. For example, if total liabilities are £150,000 and total assets are £600,000, the debts represent 25 per cent of total assets. Whether this is good or bad will, as with all accounting ratios, depend upon the norm for the industrial sector in which the company operates and on the underlying items within the figures included in the ratio.

### Capital gearing ratio

This ratio provides the proportion of a company's total capital that has a prior claim to profits over those of ordinary shareholders. Prior claim (or prior charge) capital includes debentures, other long-term loans, and preference share capital and is any capital carrying a right to a fixed return. Total capital includes ordinary share capital and reserves, preference shares and long-term liabilities.

### Debt : Equity ratio

This is the ratio of prior charge capital to ordinary share capital and reserves.

### Borrowing : Net worth

This ratio indicates the proportion that borrowing represents of a company's net worth. If long-term liabilities are £100,000 and current liabilities are £50,000, then total borrowing is £150,000. If net worth is £300,000, the ratio is 1 : 2, or 50 per cent.

This and the debt : equity ratio indicate the degree of risk to investors in ordinary shares in a company. The higher these ratios are, the greater the possibility of risk to ordinary shareholders – both in respect of expectations of future dividends (especially in times of depressed performance where much of the profits may be paid to the holders of prior charge capital), and from the threat of liquidation should there be a slump in performance that leads to a failure to meet payments to holders of prior charge capital. Whether these risks may be relevant can be investigated by reference to the next ratio.

### Interest cover

This ratio shows whether enough profits are being earned to meet interest payments when due. It is calculated by dividing profit before interest and tax by the interest charges. Thus, the interest cover is 20 times if profit before interest and tax is £400,000 and the total interest charges are £20,000. In this case, there would be little cause for immediate concern that there was any risk of the company's failing to meet its interest charges when due. However, just because a company is making profits does not guarantee that there will be sufficient cash available to make the interest charge payments when due.

## 27.7 Overtrading

A very high proportion of new businesses fail within the first two years of trading. This can occur because there was insufficient demand for the goods or services provided, because of poor management, or for any of a number of other reasons of which possibly the most common to arise is **overtrading**. However, unlike the other common causes of business failure, overtrading often arises when a business is performing profitably. Furthermore, overtrading can just as easily affect established businesses as new businesses.

Overtrading occurs when poor control over working capital results in there being insufficient liquid funds to meet the demands of creditors. As the cash dries up, so do the sources of supply of raw materials and other essential inputs – suppliers will not continue to supply a business that fails to settle its bills when due. Overtrading is generally the result of sales growth being at too fast a rate in relation to the level of trade debtors, trade creditors and stock.

Take an example where, over a twelve-month period, profits increased by 20 per cent, sales doubled from £1 million to £2 million, trade debtors doubled from £80,000 to £160,000, trade creditors quadrupled from £60,000 to £240,000, stock quadrupled from £50,000 to £200,000,

and the bank balance moved from positive £20,000 to an overdraft of £80,000. No changes occurred during the period in long-term financing of the business, though £100,000 was spent on some new equipment needed as a result of the expansion.

Working capital was 2.5 : 1; now it is 1.125 : 1 and the acid test ratio is now 0.5 : 1 from 1.67 : 1. Liquidity appears to have deteriorated significantly (but may have been high previously compared with other businesses in the same sector). Debtor days are unchanged (as the ratio of sales to debtors is unaltered). However, creditor days have probably doubled (subject to a slight reduction due to some cheaper purchasing costs as a result of the higher volumes involved). If the bank overdraft is currently at its limit, the business would be unable to meet any requests from creditors for immediate payment, never mind pay wages and other regular expenses.

This situation can be addressed by raising long-term finance, or by cutting back on the expansion – clearly, the first option is likely to be the more acceptable one to the owners of the business.

Signals suggesting overtrading include:

- (a) significant increases in the volume of sales;
- (b) lower profit margins;
- (c) deteriorating debtor, creditor and stock turnover ratios;
- (d) increasing reliance on short-term finance.

## 27.8 Summary of ratios

### Profitability

Gross profit : Sales	$\frac{\text{Gross profit}}{\text{Sales}}$
Net profit after tax : Sales	$\frac{\text{Net profit after tax}}{\text{Sales}}$
Return on capital employed	$\frac{\text{Profit before interest and tax}}{\text{Total assets} - \text{Current liabilities}}$
Return on share capital	$\frac{\text{Profit before tax}}{\text{Share capital} + \text{Reserves}}$
Net profit after tax : Total assets	$\frac{\text{Net profit after tax}}{\text{Fixed and other non-current assets} + \text{Working capital}}$
Net operating profit : Operating assets	$\frac{\text{Net profit before interest, tax, dividends, and investment income}}{\text{Tangible fixed assets} - \text{Outside investments} + \text{Working capital} + \text{Bank overdraft}}$

### Solvency

Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$
Acid test ratio	$\frac{\text{Current assets} - \text{Stock}}{\text{Current liabilities}}$

### Efficiency

Asset turnover	$\frac{\text{Sales}}{\text{Total assets} - \text{Current liabilities}}$
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Stock turnover	$\frac{\text{Cost of goods sold}}{\text{Average stock}}$
Debtor days	$\frac{\text{Debtors}}{\text{Sales}} \times 365$
Creditor days	$\frac{\text{Creditors}}{\text{Purchases}} \times 365$

### Shareholder ratios

Dividend yield	$\frac{\text{Gross dividend per share}}{\text{Market price per share}}$
Earnings per share	$\frac{\text{Net profit or loss attributable to ordinary shareholders}}{\text{Weighted average number of ordinary shares outstanding during the period}}$
Dividend cover	$\frac{\text{Net profit or loss attributable to ordinary shareholders}}{\text{Net dividend on ordinary shares}}$
Price/earnings ratio	$\frac{\text{Market price}}{\text{Earnings per share}}$

### Capital structure

Net worth : Total assets	$\frac{\text{Shareholders' funds}}{\text{Total assets}}$
Fixed assets : Net worth	$\frac{\text{Fixed assets}}{\text{Shareholders' funds}}$
Fixed assets : Net worth + long-term liabilities	$\frac{\text{Fixed assets}}{\text{Shareholders' funds} + \text{Long-term liabilities}}$
Debt ratio	$\frac{\text{Total liabilities}}{\text{Total assets}}$
Capital gearing ratio	$\frac{\text{Prior charge capital}}{\text{Total capital}}$
Debt : Equity ratio	$\frac{\text{Prior charge capital}}{\text{Ordinary share capital and reserves}}$
Borrowing : Net worth	$\frac{\text{Total borrowing}}{\text{Shareholders' funds}}$
Interest cover	$\frac{\text{Profit before interest and tax}}{\text{Interest charges}}$

**Note:** If you wish to read more about the topic of ratios, there are many worthwhile books available, such as Ciaran Walsh's *Key Management Ratios*, published by FT Prentice Hall. However, don't forget that there is no 'correct' formula for many of the financial ratios you have learnt about in this chapter. If you do read further on this topic *do not* make changes to these formulae. These are generally accepted formulae and ones your examiners will recognise.

## Learning outcomes

You should now have learnt:

- 1 There are many different categories of accounting ratios and many different ratios within each category.
- 2 Ratios that are of interest to one group of readers of financial statements may not be of interest to another.
- 3 Ratios may be used to review reliability of financial statements.
- 4 Ratios may be used to review trends between periods for the same company.
- 5 Ratios may be used to compare a company to others in the same industrial sector.
- 6 Some ratios are in wide use for which there is no agreed 'correct' formula to calculate them. This makes comparison between analysis reported elsewhere of limited value unless the formula used can be identified.
- 7 The ratios derived can be misleading if taken at face value. It is essential that they are placed in context and that interpretation goes beyond a superficial comparison to general norms.
- 8 Used casually, accounting ratios can mislead and result in poor quality decision making.
- 9 Used carefully, accounting ratios can provide pointers towards areas of interest in an entity, and provide a far more complete picture of an entity than that given by the financial statements.
- 10 Overtrading can be financially disastrous for a business and ratios can be used to help detect it.

## Answers to activities

- 27.1** Lower levels of gross profit than the industry norm, which might indicate goods were being taken out of the business for the owner's own use but not being recorded as drawings. Alternatively lower levels of gross profit than the industry norm may indicate sales for cash were not all being recorded. Basically, the Inland Revenue use ratios to detect anything that might indicate the possibility that a proprietor is understating the profit earned.
- 27.2** Stock is sometimes very difficult to convert into cash, particularly at the value placed upon it in the balance sheet. Because it can be difficult to generate liquid funds through the sale of stock, it is inappropriate to consider it when looking at the issue of whether an organisation is able to pay its debts quickly.
- 27.3** Debtors can be very difficult to turn into cash. However, there are three aspects of debtors that make them less problematic than stock in this context. Firstly, specialist financial agencies called 'factors' will take over debts in many instances in exchange for a percentage of the amount owing. Through this medium, organisations can convert some of their debtors into cash quickly and at relatively little cost. Secondly, debtors can be pursued through the courts. Thus, when an organisation urgently needs money owing from debtors that is already overdue, it can threaten legal action, thereby accelerating the receipt of the money due. Finally, most debtors do eventually pay their debts; stock may never be sold.

In the context of the cash it will generate, stock is usually sold at above the value placed upon it in the balance sheet while, apart from overestimation of doubtful debts, debtors never realise more than the value shown for them in the balance sheet. However, so far as the acid test ratio is concerned, the key difference is that money owing by debtors will generally be received more quickly than money tied up in stock.

## Review questions

**27.1** Five categories of accounting ratios were described in this chapter. What are they?

**27.2A** Why should different groups of people be interested in different categories of accounting ratios?

**27.3** Describe two ratios from each of the five groups of ratios, including how to calculate them.

**27.4A** What is the purpose in using each of the following ratios:

- (a) current ratio
- (b) net profit after tax : sales
- (c) asset turnover
- (d) interest cover
- (e) dividend cover?

**27.5** If you wished to assess the efficiency of a company, which of these ratios would you use:

- (a) stock turnover
- (b) interest cover
- (c) return on capital employed
- (d) acid test ratio
- (e) dividend yield?

**27.6A** A company has capital of 1 million ordinary shares of £1 each. It pays a dividend of 6 per cent out of its profits after tax of £480,000 on sales of £4 million. The market price of the shares is £2.40. What is the:

- (a) net profit after tax : sales
- (b) dividend yield
- (c) earnings per share
- (d) price earnings ratio?

**27.7** In respect of each of the following events, select all the effects resulting from that event that are shown in the list of effects:

- (i) a bad debt written off;
- (ii) an increase in the bank overdraft;
- (iii) a purchase of six months' stock;
- (iv) payment of all amounts due to trade creditors that had been outstanding for longer than 90 days;
- (v) an offer of 5 per cent discount to all customers who settle their accounts within two weeks.

*Effects*

- (a) increased current ratio
- (b) reduced current ratio
- (c) increased acid test ratio
- (d) reduced acid test ratio.

**27.8A** Using the following balance sheet and profit and loss accounts, calculate and comment on ten accounting ratios (ignore taxation):

**Balance Sheet as at 31 March 20X6 (£000)**

<i>Fixed assets</i>		
Equipment at cost		600
Less Depreciation to date		(200)
		<u>400</u>
<i>Current assets</i>		
Stock	300	
Debtors	60	
Bank	<u>—</u>	
		<u>360</u>
<i>Less Current liabilities</i>		
Creditors	160	
Dividends payable	12	
Bank overdraft	<u>168</u>	
		(340)
		<u>20</u>
		<u>420</u>
<i>Long-term liabilities</i>		
5% debentures		(100)
		<u>320</u>
<i>Financed by:</i>		
Share capital – ordinary shares of 50p each		250
Reserves		
General reserve		40
Profit and loss		<u>30</u>
		<u>320</u>

**Profit and Loss Account for period ending 31 March 20X6 (£000)**

Sales		2,000
Less Cost of sales		
Opening stock	250	
Add Purchases	<u>1,450</u>	
	1,700	
Less Closing stock	<u>( 300)</u>	
		(1,400)
Gross profit		<u>600</u>
Less Depreciation	80	
Other expenses	<u>477</u>	
		(557)
Net operating profit		43
Less Debenture interest		( 5)
Net profit		<u>38</u>
Add Balance b/d		<u>24</u>
		<u>62</u>
<i>Less Appropriations</i>		
General reserve	20	
Dividend	<u>12</u>	
		(32)
		<u>30</u>







**27.9** Study the following financial statements for two very similar privately owned department stores which each comprise of one store in the city centre of a major UK city and then answer the questions which follow.

### Summary of Financial Statements

<i>Balance Sheets</i>	<i>A</i>		<i>B</i>	
	£000s	£000s	£000s	£000s
<i>Fixed assets</i>				
Building at cost	300		440	
Less Depreciation to date	(255)		(220)	
		45		220
Equipment at cost	140		180	
Less Depreciation to date	(119)		( 90)	
		21		90
		66		310
<i>Current assets</i>				
Stock	200		240	
Debtors	205		140	
Bank	4		2	
	409		382	
<i>Less Current liabilities</i>				
Creditors	(245)		(252)	
		164		130
		<u>230</u>		<u>440</u>
<i>Financed by:</i>				
<i>Capital accounts</i>				
Balance at start of year		240		430
Add Net profit		60		90
		300		520
Less Drawings		( 70)		( 80)
		<u>230</u>		<u>440</u>
<i>Trading and Profit and Loss Accounts</i>				
Sales		1,800		2,700
Less Cost of goods sold				
Opening stock	300		280	
Add Purchases	1,300		2,250	
	1,600		2,530	
Less Closing stock	( 200)		( 240)	
		(1,400)		(2,290)
Gross profit		400		410
Less Depreciation	22		40	
Other expenses	318		280	
		(340)		(320)
Net profit		<u>60</u>		<u>90</u>

**Required:**

- (a) Calculate the following ratios:
- (i) gross profit as percentage of sales;
  - (ii) net profit as percentage of sales;
  - (iii) expenses as percentage of sales;
  - (iv) stockturn;
  - (v) rate of return of net profit on capital employed (use the average of the capital account for this purpose);
  - (vi) current ratio;
  - (vii) acid test ratio;
  - (viii) debtor : sales ratio;
  - (ix) creditor : purchases ratio.
- (b) Drawing upon all your knowledge of accounting, comment upon the differences and similarities of the accounting ratios for A and B. Which business seems to be the most efficient? Justify your opinion.

**27.10A** Study the following financial statements of two companies and then answer the questions which follow. Both companies are stores selling carpets and other floor coverings; each company has a single store in the same 10-year old custom-built shopping complex located on the outskirts of a major UK city.

**Trading and Profit and Loss Accounts**

	<i>R Ltd</i>		<i>T Ltd</i>	
	£000s	£000s	£000s	£000s
Sales		2,000		1,400
<i>Less Cost of goods sold</i>				
Opening stock	440		144	
Add Purchases	<u>1,550</u>		<u>996</u>	
	1,990		1,140	
Less Closing stock	<u>( 490)</u>		<u>( 240)</u>	
		(1,500)		(900)
Gross profit		500		500
<i>Less Expenses</i>				
Depreciation	27		14	
Wages and salaries	180		160	
Directors' remuneration	210		210	
Other expenses	<u>23</u>		<u>16</u>	
		(440)		(400)
Net profit		60		100
Add Balance from last year		<u>60</u>		<u>20</u>
		120		120
<i>Less Appropriations</i>				
General reserve	20		20	
Dividend	<u>50</u>		<u>40</u>	
		( 70)		( 62)
Balance carried to next year		<u>50</u>		<u>58</u>



**Balance Sheets**

	<i>R Ltd</i>	<i>T Ltd</i>
<i>Fixed assets</i>		
Building at cost	300	100
Less Depreciation to date	(150)	( 50)
	150	50
Equipment at cost	60	30
Less Depreciation to date	( 40)	( 20)
	20	10
Motor vans	40	35
Less Depreciation to date	( 16)	( 14)
	24	21
	194	81
<i>Current assets</i>		
Stock	490	240
Debtors	680	320
Bank	80	127
	1,250	687
<i>Less Current liabilities</i>		
Creditors	( 324)	( 90)
	926	597
	<u>1,120</u>	<u>678</u>
<i>Financed by:</i>		
Issued share capital	1,000	500
Reserves		
General reserve	70	120
Profit and loss	50	58
	120	178
	<u>1,120</u>	<u>678</u>

**Required:**

- (a) Calculate the following ratios for each of R Ltd and T Ltd:
- (i) gross profit as percentage of sales;
  - (ii) net profit as percentage of sales;
  - (iii) expenses as percentage of sales;
  - (iv) stockturn;
  - (v) rate of return of net profit on capital employed  
(for the purpose of this question only, take capital as being total of share capitals + reserves at the balance sheet date);
  - (vi) current ratio;
  - (vii) acid test ratio;
  - (viii) debtor: sales ratio;
  - (ix) creditor: purchases ratio.
- (b) Comment briefly on the comparison of each ratio as between the two companies. State which company appears to be the more efficient, giving what you consider to be possible reasons.

**27.11** The directors of L Ltd appointed a new sales manager towards the end of 20X2. This manager devised a plan to increase sales and profit by means of a reduction in selling price and extended credit terms to customers. This involved considerable investment in new machinery early in 20X3 in order to meet the demand which the change in sales policy had created.

The financial statements for the years ended 31 December 20X2 and 20X3 are shown below. The sales manager has argued that the new policy has been a resounding success because sales and, more importantly, profits have increased dramatically.

<b>Profit and loss accounts</b>		20X2	20X3
		£000	£000
Sales		900	2,800
Cost of sales		(360)	(1,680)
Gross profit		540	1,120
Selling expenses		(150)	( 270)
Bad debts		( 18)	( 140)
Depreciation		( 58)	( 208)
Interest		( 12)	( 192)
Net profit		302	310
Balance b/fwd		327	629
		<u>629</u>	<u>939</u>

<b>Balance sheets</b>		20X2		20X3	
	£000	£000	£000	£000	£000
<b>Fixed assets</b>					
Factory		450		441	
Machinery		490		1,791	
		<u>940</u>		<u>2,232</u>	
<b>Current assets</b>					
Stock	30		238		
Debtors	83		583		
Bank	12		—		
	<u>125</u>		<u>821</u>		
<b>Current liabilities</b>					
Creditors	( 36)		(175)		
Bank	—		( 11)		
	<u>( 36)</u>		<u>(186)</u>		
<b>Current assets less Current liabilities</b>		<u>89</u>		<u>635</u>	
		1,029		2,867	
<b>Borrowings</b>		( 100)		(1,600)	
		<u>929</u>		<u>1,267</u>	
<b>Share capital</b>		300		328	
<b>Profit and loss</b>		629		939	
		<u>929</u>		<u>1,267</u>	

- (a) **You are required to** explain whether you believe that the performance for the year ended 31 December 20X3 and the financial position at that date have improved as a result of the new policies adopted by the company. You should support your answer with appropriate ratios.
- (b) All of L Ltd's sales are on credit. The finance director has asked you to calculate the immediate financial impact of reducing the credit period offered to customers. Calculate the amount of cash which would be released if the company could impose a collection period of 45 days.

(Chartered Institute of Management Accountants)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Interpretation of financial statements

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the importance of trend analysis when analysing financial statements
- explain that there is no such thing as a generally 'good' or 'bad' value for any ratio
- describe the need to compare like with like if attempting to assess the quality of the result found from ratio analysis
- explain the pyramid of ratios that can be used in order to enhance the view obtained from ratio analysis
- explain that different groups of users of financial statements have access to different sources of information that may help in developing an understanding of and explanation for the results of ratio analysis

## Introduction

In this chapter, you'll learn more about ratio analysis and how to use it effectively. You'll revisit how to perform comparisons between organisations and the need for effective and appropriate comparators if valid and worthwhile conclusions are to be made. You'll also learn about the inter-linked relationships between ratios and look in greater detail at return on capital employed.

### 28.1 Background

When shareholders receive the financial statements of the company they have invested in, many simply look to see whether the business has made a profit, and then put the document away. (This is one reason why the introduction of an option to send shareholders abbreviated financial statements, rather than the far more costly to produce full set of financial statements, was introduced a few years ago.) They are aware of only one thing – that the company made a profit of £*x*. They do not know if it was a 'good' profit. Nor do they know whether it was any different from the profit earned in previous years. (Even if they had noticed the previous period's profit figure in the comparative column, they would be unaware of the equivalent figures for the periods that preceded it.) In addition, they would have no perception of how the performance compared with that of other companies operating in the same sector.

As explained in the previous chapter, ratio analysis can be used to assess company performance and financial position. However, as you learnt in *Business Accounting 1*, such analysis is relatively useless unless a similar task is undertaken on the financial figures for previous periods, so providing a view of the changes that have occurred over time. Trend analysis of this type is very important in the interpretation of financial statements, for it is only then that the position found can be truly placed in context and statements made concerning whether things are improving, etc.

Of similar importance if financial statements are to be usefully interpreted is comparison of the position shown with that of other companies operating in the same sector, both now and over a period of time.

## 28.2 Sector relevance

Analysis and interpretation of any phenomenon is all very well if conducted in isolation from the rest of the world. However, it can be of only limited use without comparators with which to develop an understanding of what is being examined. Even when this is done, it is important that the comparators are valid – there is not much point in comparing the performance of a Rolls-Royce with that of a bicycle. Like must be compared with like. Racing bike to racing bike, mountain bike to mountain bike, Premiership football team to Premiership football team, and so on. **For companies, the easiest way to ensure that like is being compared with like is to compare companies that operate in the same business sector.**

The importance of ensuring that any comparison undertaken between companies involves companies in the same sector can best be illustrated through an extreme example: that of the contrast between service companies and manufacturing companies.

Stating the obvious, a firm of consultants which advises its clients on marketing strategies will have far fewer tangible assets than a company with the same turnover and the same capital employed which manufactures forklift trucks. The firm of consultants will need premises, but these could easily be rented ready for use, whereas a manufacturing company would need to make major adjustments to the premises before using them. In addition, the firm of consultants would need very little in the way of machinery, possibly just some computer equipment and office equipment.

In comparison, the manufacturing company would need a great deal of machinery as well as lorries and various types of buildings, and so on. The manufacturing firm would also have stocks of materials and unsold forklift trucks. The consultancy would not have any stock.

### Activity 28.1

What effect would these types of differences have on the ratios of the two businesses?

With wider use and increasing levels of personal ownership of PCs with broadband internet access, an increasing number of employees are working from home, especially in the service sector. This trend is set to continue with a resultant reduction in the need for many service industry organisations to maintain offices of the size required in the past.

All of this has an effect on the ratios of performance calculated from the financial statements of manufacturers and service industry firms. The figure of return on capital employed for a service firm, simply because of the far lower amount of tangible assets needed, may appear to be quite high. For a manufacturing firm the opposite may well be the case.

If this distinction between these completely different types of organisation is understood, then the interpreter of the financial statements is able to judge them appropriately. Failure to understand the distinction will bring forth some very strange conclusions.

## 28.3 Trend analysis

Looking internally at one organisation, sensible comparisons can clearly be made between the situation it was in at various points in time.

### Activity 28.2

What two key things does an inward-looking analysis of this type NOT tell you? (Hint: think about the overall context.)

In *Business Accounting 1*, an example was shown of two companies, G and H. The example is now reintroduced and further developed. Exhibit 28.1 presents four ratios derived from the financial statements of G over this and the previous four years.

### Exhibit 28.1

	Year:	1	2	3	4	5 (now)
Gross profit as % of sales		40	38	36	35	34
Net profit as % of sales		15	13	12	12	11
Net profit as % of capital employed		13	12	11	11	10
Current ratio		3.0	2.8	2.6	2.3	2.0

All other thing being equal, you would expect it more likely that all four of these ratios would rise over time. However, it is clear that they are all decreasing, but there is no other information available which might clarify whether or not this should be cause for concern. For example, the industry may be becoming more competitive, causing margins to shrink, and the falling current ratio may be due to an increase in efficiency over the control of working capital.

A company with this trend of figures could provide an explanation for the decline in margins and for the reduction in liquidity in its annual report. A reader of the financial statements could then decide to accept the explanation and put the calculations away. However, there is no guarantee that an explanation of this kind actually indicates a beneficial situation, irrespective of whether or not it is accurate.

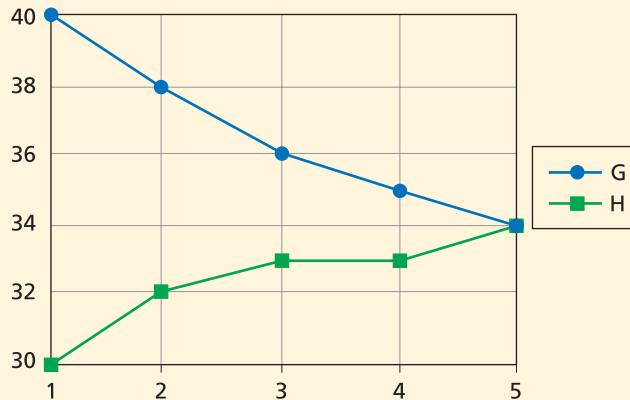
In order to gain a better understanding of the analysis, comparison with other comparable companies in the same sector is needed. Exhibit 28.2 presents the information from Exhibit 28.1 for company G plus information on another company of a similar size operating in the same sector, company H.

### Exhibit 28.2

		Years				
		1	2	3	4	5 (current)
Gross profit as % of sales	G	40	38	36	35	34
	H	30	32	33	33	34
Net profit as % of sales	G	15	13	12	12	11
	H	10	10	10	11	11
Net profit as % of capital employed	G	13	12	11	11	10
	H	8	8	9	9	10
Current ratio	G	3	2.8	2.6	2.3	2.0
	H	1.5	1.7	1.9	1.0	2.0

This form of presentation can be difficult to digest and interpret. As an alternative, these results may be compared through graphs, as shown by the example in Exhibit 28.3 which compares the trend in gross profit as a percentage of sales of the two companies. (Note that the vertical axis does not show the percentage below 30 as there is no percentage below that amount in Exhibit 28.2. Omitting the lower figures on the graph in these circumstances allows for a more informative display of the information.)

**Exhibit 28.3 The trend of gross profit as a percentage of sales**



Now, you should see the importance of placing trends in context. The companies have identical ratios for the current period – does that make them equally desirable as investments? Given one year's financial statements it appears so, but the five-year trend analysis reveals a different picture.

From these figures, G appears to be the worse investment for the future, as the trend for it appears to be downwards, while that of H is upwards. It suggests that the explanation made earlier for the falling margins may not be valid. If the trend for G is continued it could be in a very dangerous financial situation in a year or two's time. H, on the other hand, is strengthening its position all the time.

While it would be ridiculous to state without reservation that H will continue on an upward trend, or that G will continue downwards, a consistent trend of this type does suggest that the situation may well continue into the foreseeable future. It is certainly cause for further investigation.

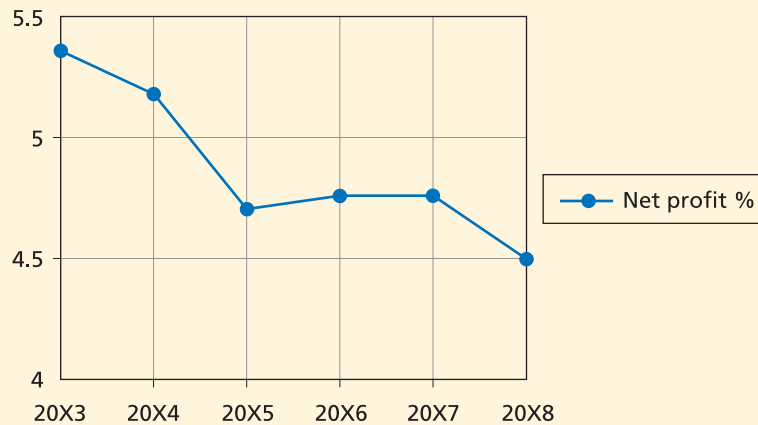
## 28.4 Comparisons over time

As shown in the previous section, one of the best ways of using ratios is to compare them with the ratios for the same organisation in respect of previous years. Take another example, the net profit percentage of a company for the past six years, including the current year 20X8:

	20X3	20X4	20X5	20X6	20X7	20X8 (now)
Net profit %	5.4	5.2	4.7	4.8	4.8	4.5

This could be presented in a graph as shown in Exhibit 28.4.



**Exhibit 28.4**

It is obvious that there is a long-term decline in the net profit percentage. This prompts us to examine why this should be so. Without measuring against past years our understanding of the direction in which the business seems to be heading would be much diminished.

We would not only look at the long-term changes in net profit percentages, but also compare similar long-term figures in relation to other aspects of the business.

Of course, other factors outside an organisation, particularly changes in the economy may make the interpretation of trends an extremely complex process. For example, the use of the historical cost accounting concept during periods of high inflation can make effective comparison of monetary amounts over time very problematic.

## 28.5 Comparisons with other businesses

We've already looked at some of the benefits of this in Section 28.3. Now, we'll consider it in more detail. No one can say in isolation that a business is very profitable. A business may have made an average net profit over the last few years of £6 million which, to most people, may seem profitable. On the other hand, if businesses of a similar size in the same industry are making £20 million a year, then the business making £6 million a year cannot be said to be very profitable.

Ideally, we would like to be able to compare the results of one business with those of similar businesses in the same industry. Then, and only then, would we be able to judge how well, or how badly, that business was doing.

The size of a business can have an important effect upon ratios. Just as we would not try to compare a chemist's shop with a building firm, it would also be wrong to judge a small independent supermarket against Sainsbury's, which owns hundreds of supermarkets.

Interfirm comparisons are also sometimes misleading because of the different accounting treatment of various items, and the location and ages of assets. Some industries have, however, set up interfirm comparisons with guidelines to the companies to ensure that the figures have been constructed using the same bases so that the information is comparable. The information does not disclose data which can be traced to any one firm, ensuring that full confidentiality is observed.

The information available may take the form shown in Exhibit 28.5.

**Exhibit 28.5 Published ratios for the widget industry (extract)**

	<i>Solvency</i>		<i>Efficiency</i>			
	<i>Current</i>	<i>Acid test</i>	<i>Asset T/O</i>	<i>Stock T/O</i>	<i>Debtor days</i>	<i>Creditor days</i>
20X6	2.4	0.7	5.4	8.2	56.4	80.4
20X7	2.2	0.8	5.7	9.3	52.6	66.8

The equivalent figures for the company being assessed can then be tabulated alongside the industry figures to enable comparisons to be made, as in Exhibit 28.6.

**Exhibit 28.6**

	<i>Company ratios</i>		<i>Industry ratios</i>	
	<i>20X6</i>	<i>20X7</i>	<i>20X6</i>	<i>20X7</i>
Current ratio	2.9	2.8	2.4	2.2
Acid test ratio	0.5	0.6	0.7	0.8
Asset turnover	5.2	5.3	5.4	5.7
Stock turnover	4.4	4.7	8.2	9.3
Debtor days	65.9	65.2	56.4	52.6
Creditor days	58.3	56.8	80.4	66.8

The financial status of the company is now much clearer. What appeared to be a situation of improving liquidity and efficiency is now shown to be an increasingly poorer liquidity and efficiency position compared with the industry as a whole.

However, it should be borne in mind that the industry figures probably include many companies that are either much larger or much smaller than the company being assessed. To obtain a more complete picture, information is needed concerning companies of a similar size, such as in the comparison between G and H earlier in this chapter (*see* Section 28.3). This information may be available from the source of the interfirm comparison. If not, other sources would need to be used, for example the published financial statements of appropriate companies.

The other information missing from the above comparison is data from previous periods. While not so relevant to the current position, it can be useful in explaining why a situation has developed, and in determining whether the current position is likely to persist.

**Activity 28.3**

When an organisation operates in more than one sector, how do you identify other appropriate organisations with which to make comparisons?

**28.6 Pyramid of ratios**

Once ratios have been analysed and compared, explanations must be sought for the results obtained. Sometimes it will be obvious why a certain result was obtained – for example, if a company has moved from traditional stock-keeping to a just-in-time system during the period, its stock turnover will bear no resemblance to that which it had in the previous period.

For those inside the company – its directors and management – the management accounting records are available to assist in finding explanations, as are the company's staff. Outsiders – shareholders, analysts, lenders, suppliers, customers, etc. – do not have access to all this internal information (though some of these user groups will have access to more internal information

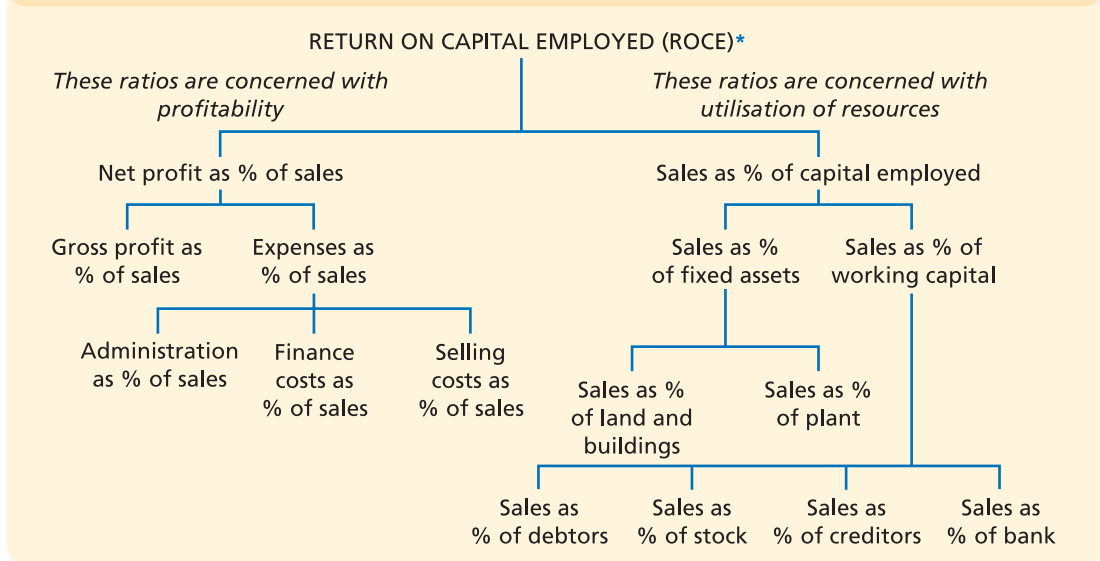
than others – banks, for example, can usually obtain copies of a company's confidential internal accounting information upon request). They must, instead, fall back upon other sources of information, such as newspaper reports and industry publications.

One source of additional information available to everyone is a result of the fact that most ratios can be further subdivided into secondary ratios which, themselves, can also be subdivided, so building into a **pyramid of ratios**. By following through the pyramid of a given ratio, the source of the original ratio can often be isolated, enabling a far more focused investigation than would otherwise be possible.

For example, one of the most important ratios is the return on the capital employed (ROCE). This ratio has not happened by itself. If the ratio of net profit to sales had not been a particular figure and the ratio of sales to capital employed had not been a particular figure, then the ROCE would not have turned out to be the figure that it is.

Thus, the ROCE comes about as a result of all the other ratios which have underpinned it. It is the final summation of all that has happened in the various aspects of the business. The ROCE pyramid of ratios is shown in Exhibit 28.7.

### Exhibit 28.7



**\*Note: The formula for ROCE used here is a (very) simplified version of the formula listed in Section 27.8. Nevertheless, to all intents and purposes, it is the same formula.**

By itself, the pyramid of ratios does not tell you everything. It comes into full effect when compared with similar ratios from previous years, or with similar pyramids of ratios in respect of other businesses. If the ROCE has been falling over the past year, a study of the pyramid of ratios for each of the previous two years may enable you to pinpoint exactly where the changes have been made to bring about the worsening position. Investigation of these matters may then give you some indication of the action to take.

## 28.7 Return on capital employed: company policy

The pyramid of ratios in Exhibit 28.7 illustrates the interdependence of each ratio. This can be examined in greater detail by investigating the policies of two companies to achieve their desired return on capital employed.

The first part of the pyramid tells us that the ROCE is dependent on both net profit as a percentage of sales and also sales as a percentage of capital employed. This means that:

$$\text{ROCE} = \frac{\text{Net profit}}{\text{Capital employed}}$$

which by splitting the equation between profitability ratios and resource utilisation ratios means also that:

$$\text{ROCE} = \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital employed}}$$

This interrelationship of the subsidiary ratios can be illustrated through an example. At the same time, it can be seen that the result of computing a primary ratio is dependent upon the items comprising it; and that there is no guarantee that a value of  $x$  will be 'good', and  $y$  'bad'. Whether the result obtained is 'good' or 'bad' depends on the underlying factors that give rise to the result obtained (what, for example, is the company's policy on depreciation and replacement of assets, as this can significantly affect the ROCE?), the sector in which the business operates and its relative size. Without knowledge of these items, comparison of the ratio analysis of two companies is likely to be misleading at best.

Two companies, both in the grocery business, may decide to aim for the same ROCE of 10 per cent. This can be achieved in completely different ways by the two companies.

A Ltd is a large company operating a supermarket. It seeks to attract customers by offering low prices and makes a net profit of only 1.25 per cent on sales. Its sales for the year are £8,000,000 on which its net profit is £100,000. Its capital employed is £1,000,000. The ROCE is, therefore, 10 per cent (i.e. £100,000 net profit on capital employed of £1,000,000). This can also be expressed as:

$$\begin{aligned}\text{ROCE} &= \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital employed}} \\ &= \frac{£100,000}{£8,000,000} \times \frac{£8,000,000}{£1,000,000} \\ &= 10\%\end{aligned}$$

B Ltd by comparison is a small local retailer. It seeks a higher margin per £100 sales, but because of higher prices it will achieve a lower volume of business. It makes a net profit of 5 per cent on sales. Its sales for the year amount to £200,000 on which it makes a net profit of £10,000. The capital employed is £100,000. The ROCE is therefore 10 per cent (i.e. £10,000 on capital employed of £100,000). This can also be expressed as:

$$\begin{aligned}\text{ROCE} &= \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital employed}} \\ &= \frac{£10,000}{£200,000} \times \frac{£200,000}{£100,000} \\ &= 10\%\end{aligned}$$

It can be seen that two firms, despite different sizes of business and operating different pricing policies, can have the same ROCE.

## Learning outcomes

You should now have learnt:

- 1 Ratios on their own are frequently misleading – they should not be considered in isolation from similar computations:
  - (a) in previous periods; and/or
  - (b) on similar-sized firms in the same sector.
- 2 The items in the financial statements are affected by company policy – for example, the rate of depreciation to use, and the policy of asset replacement; the policies adopted, therefore, directly affect the ratio analysis.
- 3 Companies of very different size and in very different sectors can have the same ratio results despite their being different in every respect.
- 4 The importance and impact of size, sector and company policies upon ratios mean that there is no such thing as a ‘good’ or ‘bad’ value that can be treated as a yardstick for any ratio.
- 5 All ratios are part of one or more pyramids of ratios.
- 6 When the results of ratio analysis are being investigated further, the relevant pyramid of ratios can be analysed in order to pinpoint the element giving rise to the situation being investigated.

## Answers to activities

- 28.1** The service business will probably have a lower current ratio – it has no stock. Its creditor days are probably near zero. Its return on capital employed is probably much higher. Its asset turnover may be extremely high – it may not have very many fixed assets. Overall, trying to draw any sensible conclusions by comparing the ratios of these two businesses will be a waste of time.
- 28.2** It won't tell you whether the organisation is or was in a good position relative to its competitors or other organisations in the same sector. Nor will it tell you if changes in the ratios are actually moving in the appropriate direction for the sector in which the organisation operates.
- 28.3** In this case, you can try to identify other organisations with a similar range of activities. However, it would probably be more beneficial to separate out the data relating to each type of activity and then compare the reduced data against appropriate comparitors.

## Advice

Ratio analysis is a topic that causes more marks to be thrown away in exams than probably every other topic combined. No other accounting topic is as concerned with understanding rather than knowledge, and examiners increasingly expect you to be able to demonstrate understanding rather than simply your ability to prepare the financial statements or calculate the ratios.

There is no one set pattern to the questions, which depend upon the examiner's ingenuity and background experience. The usual shortcomings in the answers handed in by examinees, particularly on questions relating to this topic but also on questions in other areas, can be listed as follows:

- 1 Not following the instructions as laid down. If the question says ‘list the’ then the examiner expects a list as an answer, ‘Discuss the’ means exactly that, ‘Write a report’ needs a report as the answer, and so on. You will lose a lot of marks for not giving the examiner exactly what has been asked for.
- 2 Very often all the ratios etc. are calculated, but then the candidate does not offer any comments even though they have been asked for. *Make certain you cover this part of the question in an appropriate amount of detail.*

- 3 Even where students have written something about the ratios, they often repeat what the calculations are and offer nothing else, e.g. 'you can see that the gross profit ratio has increased from 18 to 20 per cent' and the answer has finished there. The examiner can already see from your calculations that the gross profit percentage has increased, and wants you to write about *why* it might have increased, what conclusions, if any, can be arrived at, or what further information may be needed to discover why it has changed.
- 4 Remember that when the examiner asks you 'what other information you would like to have' about a firm when trying to interpret the financial statements so as to give advice to someone then, ideally, you would like to know more about the plans for the future of the business, how it compares with others in the same industry, whether or not there are going to be changes in the management and so on. We should not limit ourselves to information about the past, we really need to know as much about the future as we possibly can.
- 5 Do not restrict your examination answers to what you have read in a textbook. Keep your eyes and ears open as you go shopping, visit factories, work, buy petrol at the filling station, go to the theatre, and so on. Reading a 'quality' newspaper helps, as there are quite a lot of items about business. Bring all of this sort of knowledge and experience into your answers. You will impress the examiners. They are extremely bored reading regurgitations of textbook learning with nothing added.
- 6 Quite a few questions will concern the type of business of which you will have first-hand experience, so you can introduce personal knowledge into your answer. A typical instance would be comparing two grocery businesses. One would be a large supermarket and the other would be a small corner shop. The policies of the two firms would be quite different. The supermarket would have decided on a policy of attracting new customers by lowering sales margins and yet boosting ROCE. The corner shop might have a policy of high margins, but remain open on Sundays and late at nights, and thus be a 'convenience shop', i.e. customers might well go there when other shops are closed or are too far away to be worth the extra cost in petrol, etc. when compared with the extra cost of shopping at the corner shop.
- 7 Last, but not least, *show your workings*. If you make a mistake in your calculations and do not show your workings you cannot be awarded any credit for a partially incorrect calculation. Consider how much longer it takes to show the detail contained in Section 28.7 above, rather than simply the result of the calculation – maybe 30 seconds. *Now consider whether you would rather spend five minutes in an exam showing the workings of ten ratio calculations, or six months studying to retake the exam you failed because you made a mistake in two of your calculations and lost five marks because the examiner could not tell why you got the answer wrong.*

## Review questions

**28.1** Adrian Frampton was considering the purchase of one of two businesses. However, Frampton had only been provided with limited information about the businesses, as follows:

### Summarised Financial Information for the year ended 31 December 20X9

Information	Business X	Business Y
Cost of goods sold	£400,000	£600,000
Administrative expenses	£50,000	£60,000
Average stock at cost	£40,000	£50,000
Working capital as at 31 December 20X9	£90,000	£250,000
Selling and distribution expenses	£15,000	£35,000
Proprietor's capital at 1 January 20X9	£200,000	£350,000
Gross profit percentage mark-up on cost	20	25

#### Additional information:

- 1 Average stock had been calculated by using the year's opening and closing stocks. Subsequently it was discovered that Business Y had overvalued its stock on 31 December 20X9 by £10,000.
- 2 Business X's administrative expenses included a payment for rent of £15,000 which covered a three-year period to 31 December 20X1.



- 3 A sum of £2,500 was included in the administrative expenses of Business Y in respect of a holiday taken by the owner and his family.
- 4 Cash drawings for the year ended 31 December 20X9 were:

	£
Business X	20,000
Business Y	25,000

- 5 The owners of the businesses had stipulated the following prices for their businesses:

	£
Business X	190,000
Business Y	400,000

**Required:**

- (a) Based on the information available prepare comparative trading and profit and loss accounts for the year ended 31 December 20X9.
- (b) Using the information provided and the accounting statements prepared in (a), calculate relevant accounting ratios in order to give Frampton a basis for assessing the performances of the two businesses. Comment on the results.
- (c) What additional information is needed in order to assess more accurately
- the liquidity of the businesses;
  - the future prospects of the businesses?

(AQA (Associated Examining Board): GCE A-level)

**28.2** Three companies have the capital structures shown below.

Company	A	B	C
	£000	£000	£000
Ordinary shares	600	400	50
12% debentures	—	200	550
	<u>600</u>	<u>600</u>	<u>600</u>

The return on capital employed was 20 per cent for each firm in 20X4, and in 20X5 was 10 per cent. Corporation tax in both years was assumed to be 55 per cent, and debenture interest is an allowable expense against corporation tax.

- (a) Calculate the percentage return on the shareholders' capital for each company for 20X4 and 20X5. Assume that all profits are distributed.
- (b) Use your answer to explain the merits and the dangers of high gearing.

(Edexcel: University of London GCE A-level)

**28.3A** Martha is the accountant of a trading business. During the past year she produced interim accounts for the six months ended 30 November 20X5, and draft final accounts for the year ended 31 May 20X6, as follows:

	Interim accounts	Draft final accounts
	£	£
Sales (all on credit terms)	140,000	336,000
Cost of sales (Note 1)	<u>42,000</u>	<u>112,000</u>
Gross profit	98,000	224,000
Less Expenses	<u>56,000</u>	<u>168,000</u>
Net profit	<u>42,000</u>	<u>56,000</u>
Fixed assets	70,000	63,000
Current assets (Note 2)	42,000	71,000
Current liabilities (Note 3)	(22,000)	(30,000)
	<u>90,000</u>	<u>104,000</u>
Share capital	30,000	30,000
Retained earnings	<u>60,000</u>	<u>74,000</u>
	<u>90,000</u>	<u>104,000</u>

Notes:

- 1 Average stock was £14,000 during the first six months.
- 2 Current assets were:

	30 Nov 20X5	31 May 20X6
	£	£
Stock	16,000	25,000
Debtors	24,000	28,000
Bank	<u>2,000</u>	<u>18,000</u>
	<u>42,000</u>	<u>71,000</u>

- 3 Current liabilities consisted entirely of trade creditors.

Martha informs you that the business leased additional premises from 1 December 20X5, and that sales arising therefrom totalled £70,000 for the six months to 31 May 20X6, with an average mark-up on cost prices of 150 per cent being made on those goods.

Expenses relating to these additional premises totalled £21,000 for the period. Two-fifths of the closing stock of the business was located at these premises.

**Prepare a report**, using appropriate accounting ratios, to explain the changes in the financial situation of the business during the year ended 31 May 20X6.

(Edexcel: University of London GCE A-level)

**28.4** John Jones is considering purchasing shares in one of two companies and has extracted the following information from the balance sheet of each company.

	Company A Plc £000	Company B Plc £000
<i>Authorised share capital</i>		
£1 ordinary shares	600	1,000
8% £1 preference shares	400	
<i>Issued share capital</i>		
£1 ordinary shares	300	800
8% £1 preference shares	200	
<i>Reserves</i>		
Share premium	300	400
Retained earnings	400	200
<i>Loan capital</i>		
10% debentures (20X0)		200
12% debentures (20X6)	400	

**Required:**

- (a) Define the term 'gearing' stating clearly what is meant by a low gearing ratio.
- (b) Calculate the gearing factor for each company.
- (c) Explain to John Jones the significance of gearing to an ordinary shareholder in each of the companies above.
- (d) Assuming for each company a trading profit of £200,000 before interest and an ordinary dividend of 15 per cent complete the profit and loss appropriation account for a year for each company. You should ignore taxation.

(AQA (Associated Examining Board): GCE A-level)







**28.5A** The following are extracts from the balance sheets as at 31 March 20X4 and 31 March 20X5 of Glebe Ltd:

	31 March 20X4		31 March 20X5	
	£	£	£	£
Current assets				
Stocks	20,000		25,000	
Trade debtors	10,000		17,000	
Cash	<u>5,000</u>		<u>3,000</u>	
		35,000		45,000
Less				
Current liabilities				
Trade creditors	12,000		16,000	
Proposed dividends	6,000		5,000	
Bank overdraft	<u>7,000</u>		<u>29,000</u>	
		(25,000)		(50,000)
		10,000		( 5,000)

**Required:**

- Calculate for each of the two years two ratios that indicate the liquidity position of the company.
- (i) From the information given, give reasons for the changes which have occurred in the working capital.  
(ii) What other information regarding the current assets and current liabilities would you consider necessary to assess the ability of the business to continue in operation?
- Discuss any other information available from a balance sheet that may affect an assessment of the liquidity of a business.

(AQA (Associated Examining Board): GCE A-level)

**28.6** Colin Black is considering investing a substantial sum in the ordinary shares of Jacks Ltd. Having some accounting knowledge he has extracted the following information from the accounts for the last two financial years.

	As at 31 March 20X4	As at 31 March 20X5
	£	£
Issued share capital		
£1 ordinary shares, fully paid	100,000	150,000
Reserves		
Share premium	10,000	60,000
Retained earnings	140,000	160,000
Loan capital		
10% debentures 20X7–X9	40,000	40,000
	For year ended	For year ended
	31 March 20X4	31 March 20X5
	£	£
Net profit after tax	60,000	70,000

Because he was disappointed with the result he obtained when he calculated the return on the equity capital employed, Colin Black has asked for your advice.

**Required:**

- Calculate the figures which prompted Colin Black's reaction.
- Prepare a memorandum to Colin Black pointing out other information to be considered when comparing the return on equity capital employed over two years as a basis for his investment decision.
- Explain why a company builds up and maintains reserves.

(AQA (Associated Examining Board): GCE A-level)

**28.7A** The following information has been extracted from the accounts of Witton Way Ltd:

**Profit and Loss Account for the year to 30 April**

	20X5 £000	20X6 £000
Turnover (all credit sales)	7,650	11,500
Less Cost of sales	(5,800)	( 9,430)
Gross profit	1,850	2,070
Other expenses	( 150)	( 170)
Loan interest	( 50)	( 350)
Profit before taxation	1,650	1,550
Taxation	( 600)	( 550)
Profit after taxation	1,050	1,000
Dividends (all ordinary shares)	( 300)	( 300)
Retained profits	<u>750</u>	<u>700</u>

**Balance Sheet at 30 April**

	20X5 £000	20X6 £000
<i>Fixed assets</i>		
Tangible assets	<u>10,050</u>	<u>11,350</u>
<i>Current assets</i>		
Stocks	1,500	2,450
Trade debtors	1,200	3,800
Cash	<u>900</u>	<u>50</u>
	3,600	6,300
Creditors: Amounts falling due within one year	( 2,400)	( 2,700)
Net current assets	<u>1,200</u>	<u>3,600</u>
Total assets less current liabilities	11,250	14,950
<i>Creditors:</i>		
Amounts falling due after more than one year		
Loans and other borrowings	( 350)	( 3,350)
	<u>10,900</u>	<u>11,600</u>
<i>Capital and reserves</i>		
Called-up share capital	5,900	5,900
Profit and loss account	<u>5,000</u>	<u>5,700</u>
	<u>10,900</u>	<u>11,600</u>

*Additional information:*

During the year to 30 April 20X6, the company tried to stimulate sales by reducing the selling price of its products and by offering more generous credit terms to its customers.

**Required:**

- Calculate six accounting ratios specifying the basis of your calculations for each of the two years to 30 April 20X5 and 20X6 respectively which will enable you to examine the company's progress during 20X6.
- From the information available to you, including the ratios calculated in part (a) of the question, comment upon the company's results for the year to 30 April 20X6 under the heads of 'profitability', 'liquidity', 'efficiency' and 'shareholders' interests'.
- State what additional information you would require in order to assess the company's attempts to stimulate sales during the year to 30 April 20X6.

(Association of Accounting Technicians)





**28.8** You are presented with the following information for three quite separate and independent companies:

**Summarised Balance Sheets at 31 March 20X7**

	<i>Chan plc</i> £000	<i>Ling plc</i> £000	<i>Wong plc</i> £000
Total assets /less current liabilities	600	600	700
Creditors: amounts falling due after more than one year			
10% debenture stock	—	—	( 100)
	<u>£600</u>	<u>£600</u>	<u>£600</u>
Capital and reserves:			
Called-up share capital			
Ordinary shares of £1 each	500	300	200
10% cumulative preference shares of £1 each	—	200	300
Profit and loss account	100	100	100
	<u>£600</u>	<u>£600</u>	<u>£600</u>

*Additional information:*

- The operating profit before interest and tax for the year to 31 March 20X8 earned by each of the three companies was £300,000.
- The effective rate of corporation tax for all three companies for the year to 31 March 20X8 is 30 per cent. This rate is to be used in calculating each company's tax payable on ordinary profit.
- An ordinary dividend of 20p for the year to 31 March 20X8 is proposed by all three companies, and any preference dividends are to be provided for.
- The market prices per ordinary share at 31 March 20X8 were as follows:

	£
Chan plc	8.40
Ling plc	9.50
Wong plc	10.38

- There were no changes in the share capital structure or in long-term loans of any of the companies during the year to 31 March 20X8.

**Required:**

- In so far as the information permits, prepare the profit and loss account for each of the three companies (in columnar format) for the year to 31 March 20X8 (formal notes to the accounts are not required);
- calculate the following accounting ratios for each company:
  - earnings per share;
  - price earnings;
  - gearing (taken as total borrowings (preference share capital and long-term loans) to ordinary shareholders' funds); and
- using the gearing ratios calculated in answering part (b) of the question, briefly examine the importance of gearing if you were thinking of investing in some ordinary shares in one of the three companies assuming that the profits of the three companies were fluctuating.

(Association of Accounting Technicians)

**28.9A** The chairman of a family business has been examining the following summary of the accounts of the company since it began three years ago.

**Balance Sheet (at 30 June) £000**

	20X4 Actual	20X5 Actual	20X6 Actual
Freehold land and buildings	150	150	150
Plant	150	150	450
Less: Depreciation	( 15)	( 30)	( 75)
	135	120	375
	285	270	525
Stock and work in progress	20	45	85
Debtors	33	101	124
Bank and cash	10	15	—
	63	161	209
Less: Creditors	( 20)	( 80)	( 35)
Taxation	( 4)	( 17)	( 6)
Overdraft	( —)	( —)	( 25)
	39	64	143
	324	334	668
Less: Loan	( —)	( —)	(200)
	324	334	468
Ordinary share capital (£1 shares)	300	300	400
General reserve	17	25	45
Deferred tax account	7	9	23
	324	334	468

**Profit and Loss Account (for year to 30 June) £000**

	20X4 Actual	20X5 Actual	20X6 Actual
Sales	260	265	510
Trading profit	53	50	137
Depreciation	15	15	45
Loan interest	—	—	43
	( 15)	( 15)	( 88)
Net profit	38	35	49
Taxation (including transfer to or from deferred tax account)	( 11)	( 15)	( 15)
Net profit after tax	27	20	34
Dividend (proposed*)	( 10)	( 12)	( 14)*
Retained	17	8	20

The company's products are popular in the locality and in the first two years sales could have been higher if there had been extra machine capacity available.

On 1 January 20X6, additional share and loan capital was obtained which enabled extra machinery to be purchased. This gave an immediate increase in sales and profits.

Although 20X5/X6 showed the best yet results, the chairman is not very happy; the accountant has suggested that a dividend should not be paid this year because of the overdraft. The accountant has, however, shown a proposed dividend of £14,000 (£2,000 up on last year) for purposes of comparison pending a decision by the directors.

Naturally, the chairman is displeased and wants some explanations from the accountant regarding the figures in the accounts. He specifically asks:



- (i) Why, if profits are the best ever and considering the company has obtained extra capital during the year, has the company gone into overdraft? Can there really be a profit if there is no cash left in the bank to pay a dividend?
- (ii) Why is the freehold still valued at the same price as in 20X4? The real value seems to be about £225,000. Why is this real value not in the balance sheet?

**Required:**

Write a report to the chairman:

- (a) commenting on the state and progress of the business as disclosed by the accounts and the above information, supporting your analysis by appropriate key accounting ratios, and
- (b) giving reasoned answers, in the context of recognised accounting law, rules and practices, to each of the questions raised by the chairman.

*(Institute of Chartered Secretaries and Administrators)*

**28.10** The following information is provided for Bessemer Ltd which operates in an industry subject to marked variations in consumer demand.

(i) Shareholders' equity at 30 September 20X5:	£000
Issued ordinary shares of £1 each fully paid	5,000
Retained profits	<u>1,650</u>
	<u>6,650</u>

There were no loans outstanding at the balance sheet date.

(ii) Profit and loss account extracts: year to 30 September 20X5:	£000
Net profit before tax	900
Less Corporation tax	<u>270</u>
	630
Less Dividends	<u>600</u>
Retained profit for the year	30
Retained profit at 1 October 20X4	<u>1,620</u>
Retained profit at 30 September 20X5	<u>1,650</u>

- (iii) The directors are planning to expand output. This will require an additional investment of £2,000,000 which may be financed either by issuing 1,000,000 ordinary shares each with a nominal value of £1, or by raising a 12 per cent debenture.

- (iv) Forecast profits before interest charges, if any, for the year to 30 September:

	£000
20X6	1,800
20X7	500
20X8	2,200

A corporation tax rate of 30 per cent on reported profit before tax may be assumed; the directors plan to pay out the entire post-tax profit as dividends.

**Required:**

- (a) The forecast profit and loss appropriation accounts for each of the next three years and year-end balance sheet extracts, so far as the information permits, assuming that the expansion is financed by:
- (i) issuing additional shares, or
- (ii) raising a debenture.
- (b) Calculate the forecast return on shareholders' equity, for each of the next three years, under the alternative methods for financing the planned expansion.
- (c) An assessment of the merits and demerits of the alternative methods of finance based on the calculations made under (a) and (b) and any other relevant methods of comparison.

*(Institute of Chartered Secretaries and Administrators)*

**28.11A** An investor is considering the purchase of shares in either AA plc or BB plc whose latest accounts are summarised below. Both companies carry on similar manufacturing activities with similar selling prices and costs of materials, labour and services.

**Balance Sheets at 30 September 20X7 (£000)**

	<i>AA plc</i>	<i>BB plc</i>
Freehold property at revaluation 20X5	2,400	–
Plant, machinery and equipment:		
at cost	1,800	1,800
depreciation	<u>1,200</u>	<u>400</u>
	600	1,400
Goodwill	–	800
Stocks: finished goods	400	200
work in progress	300	100
Debtors	800	500
Bank deposit	<u>–</u>	<u>400</u>
	4,500	3,400
Less Liabilities due within one year		
Creditors	600	900
Overdraft	<u>200</u>	<u>–</u>
	800	900
Liabilities due after one year	<u>1,400</u>	<u>1,000</u>
	(2,200)	(1,900)
	<u>2,300</u>	<u>1,500</u>
Ordinary £1 shares	1,000	500
Reserves	<u>1,300</u>	<u>1,000</u>
	<u>2,300</u>	<u>1,500</u>

**Profit and Loss Accounts – Year to 30 September 20X7 (£000)**

	<i>AA plc</i>	<i>BB plc</i>
Sales	<u>2,500</u>	<u>2,500</u>
Operating profit	400	600
Depreciation – plant, machinery and equipment	180	180
Loan interest	<u>150</u>	<u>160</u>
	(330)	(340)
	70	260
Bank interest	<u>–</u>	<u>100</u>
	70	360
Taxation	( 20)	( 90)
Available to ordinary shareholders	50	270
Dividend	( 40)	(130)
Retained	<u>10</u>	<u>140</u>
Price/earnings ratio	30	5
Market value of share	£1.50	£2.70

**Required:**

- write a report to the investor, giving an appraisal of the results and state of each business, and
- advise the investor whether, in your opinion, the price/earnings ratios and market price of the shares can be justified in the light of the figures in the accounts, giving your reasons.

(Institute of Chartered Secretaries and Administrators)





**28.12** The following are the summarised accounts for B Limited, a company with an accounting year ending on 30 September.

**Summarised Balance Sheets for**

	20X5/6		20X6/7	
	£000	£000	£000	£000
Tangible fixed assets – at cost				
Less Depreciation		4,995		12,700
Current assets:				
Stocks	40,145		50,455	
Debtors	40,210		43,370	
Cash at bank	<u>12,092</u>		<u>5,790</u>	
	<u>92,447</u>		<u>99,615</u>	
Creditors: amounts falling due within one year:				
Trade creditors	32,604		37,230	
Taxation	2,473		3,260	
Proposed dividend	<u>1,785</u>		<u>1,985</u>	
	<u>36,862</u>		<u>42,475</u>	
Net current assets		<u>55,585</u>		<u>57,140</u>
Total assets /less current liabilities		60,580		69,840
Creditors: amounts falling due after more than one year:				
10% debentures 20X6/20X9		(19,840)		(19,840)
		<u>40,740</u>		<u>50,000</u>
Capital and reserves:				
Called-up share capital of £0.25 per share		9,920		9,920
Profit and loss account		<u>30,820</u>		<u>40,080</u>
Shareholders' funds		<u>40,740</u>		<u>50,000</u>

**Summarised Profit and Loss Accounts for**

	20X5/6	20X6/7
	£000	£000
Turnover	<u>486,300</u>	<u>583,900</u>
Operating profit	17,238	20,670
Interest payable	( 1,984)	( 1,984)
Profit on ordinary activities before taxation	15,254	18,686
Tax on profit on ordinary activities	( 5,734)	( 7,026)
Profit for the financial year	9,520	11,660
Dividends	( 2,240)	( 2,400)
	7,280	9,260
Retained profit brought forward	<u>23,540</u>	<u>30,820</u>
Retained profit carried forward	<u>30,820</u>	<u>40,080</u>

**You are required to:**

- calculate, for each year, two ratios for each of the following user groups, which are of particular significance to them: (i) shareholders; (ii) trade creditors; (iii) internal management;
- make brief comments upon the changes, between the two years, in the ratios calculated in (a) above.

(Chartered Institute of Management Accountants)

**28.13A** The following are the financial statements of D Limited, a wholesaling company, for the year ended 31 December:

<b>Profit and Loss Accounts</b>	<b>20X4</b>	<b>20X4</b>	<b>20X5</b>	<b>20X5</b>
	<b>£000</b>	<b>£000</b>	<b>£000</b>	<b>£000</b>
Turnover – credit sales	2,200		2,640	
cash sales	<u>200</u>		<u>160</u>	
		2,400		2,800
Cost of sales		(1,872)		(2,212)
Gross profit		528		588
Distribution costs		(278)		(300)
Administration expenses		(112)		(114)
Operating profit		138		174
Interest payable		<u>–</u>		( 32)
Profit on ordinary activities before tax		<u>138</u>		<u>142</u>
 <b>Balance Sheets as at 31 December</b>	 <b>20X4</b>	 <b>20X4</b>	 <b>20X5</b>	 <b>20X5</b>
	<b>£000</b>	<b>£000</b>	<b>£000</b>	<b>£000</b>
Tangible fixed assets		220		286
Current assets: Stocks	544		660	
Debtors	384		644	
Cash at bank	<u>8</u>		<u>110</u>	
	936		1,414	
Creditors: amounts falling due within one year:				
Trade creditors	(256)		( 338)	
Net current assets		680		1,076
Total assets less current liabilities		900		1,362
Creditors: amounts falling due after more than one year:				
Debenture loans		–		( 320)
Shareholders' funds		<u>900</u>		<u>1,042</u>

The following information should be taken into consideration.

**1** You may assume that:

- (i) the range of products sold by D Limited remained unchanged over the two years;
- (ii) the company managed to acquire its products in 20X5 at the same prices as it acquired them for in 20X4;
- (iii) the effects of any inflationary aspects have been taken into account in the figures.

**2** Ignore taxation.

**3** All calculations must be shown to one decimal place.

**You are required**, using the information above, to assess and comment briefly on the company, from the point of view of:

- (a) profitability;
- (b) liquidity.

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**28.14** G plc is a holding company with subsidiaries that have diversified interests. G plc's board of directors is interested in the group acquiring a subsidiary in the machine tool manufacturing sector. Two companies have been identified as potential acquisitions, A Ltd and B Ltd. Summaries of both these companies' accounts are shown below:

**Profit and Loss Accounts for the year ended 30 April 20X8**

	<i>A Ltd</i> £000	<i>B Ltd</i> £000
Turnover	<u>985</u>	<u>560</u>
Cost of goods sold		
Opening stock	150	145
Materials	255	136
Labour	160	125
Factory overheads	205	111
Depreciation	35	20
Closing stock	<u>(155)</u>	<u>(140)</u>
	<u>650</u>	<u>397</u>
Gross profit	335	163
Selling and administration expenses	(124)	( 75)
Interest	<u>( 35)</u>	<u>( 10)</u>
Profit before taxation	176	78
Taxation	<u>65</u>	<u>25</u>
Profit after taxation	<u><u>111</u></u>	<u><u>53</u></u>

**Balance Sheets at 30 April 20X8**

	<i>A Ltd</i>		<i>B Ltd</i>	
	£000	£000	£000	£000
Fixed assets		765		410
Current assets				
Stock	155		140	
Debtors	170		395	
Bank	<u>50</u>		<u>45</u>	
	<u>375</u>		<u>580</u>	
Current liabilities				
Trade creditors	235		300	
Other	<u>130</u>		<u>125</u>	
	<u>(365)</u>		<u>(425)</u>	
Net current assets		10		155
Debentures		<u>(220)</u>		<u>( 70)</u>
		<u>555</u>		<u>495</u>
Share capital		450		440
Profit and loss account		<u>105</u>		<u>55</u>
		<u><u>555</u></u>		<u><u>495</u></u>

**You are required to** prepare a report for the board of G plc assessing the financial performance and position of A Ltd and B Ltd. Your report should be prepared in the context of G plc's interests in these two companies and should be illustrated with financial ratios where appropriate. You should state any assumptions you make as well as any limitations of your analysis.

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**28.15A** J plc supplies and fits car tyres, exhaust pipes and other components. The company has branches throughout the country. Roughly 60 per cent of sales are for cash (retail sales). The remainder are credit sales made to car hire companies and large organisations with fleets of company cars (business sales). Business sales tend to be more profitable than retail and the company is keen to expand in this area. There is, however, considerable competition. Branch managers are responsible for obtaining business customers and have some discretion over terms of trade and discounts.

The company's computerised accounting system has recently produced the following report for the manager of the Eastown branch for the six months ended 30 September 20X4:

	<i>Eastown Branch</i>	<i>Average for all branches</i>
Return on capital employed	22%	16%
Gross profit	38%	45%
Selling and promotion costs/sales	9%	6%
Wages/sales	19%	14%
Debtors turnover (based on credit sales only)	63 days	52 days
Stock turnover	37 days	49 days

The Eastown branch manager has only recently been appointed and is unsure whether his branch appears well managed. He has asked for your advice.

**You are required to** compare the performance of the Eastown branch with the average for all branches. Suggest reasons for the differences you identify.

*(Chartered Institute of Management Accountants)*

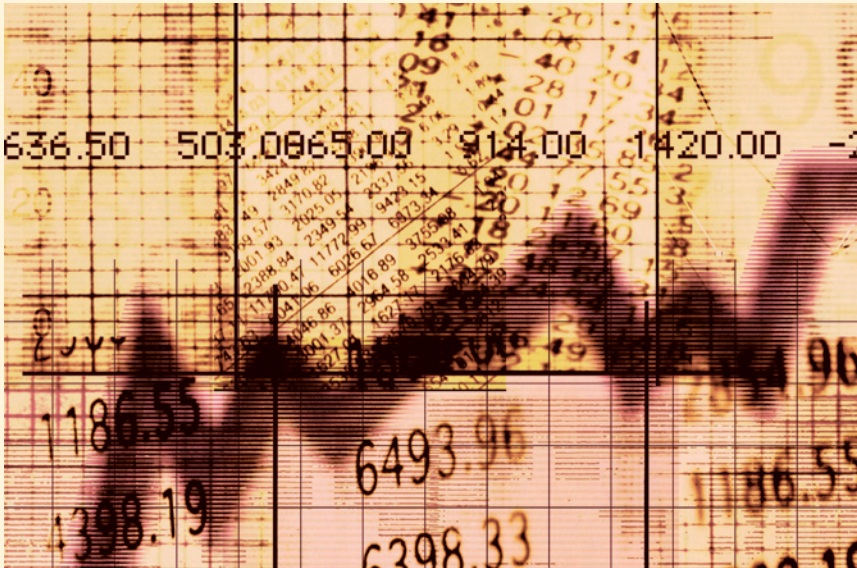
**28.16A** Company managers are aware that the readers of financial statements often use accounting ratios to evaluate their performance. **Explain** how this could lead to decisions which are against the company's best interests.

*(Chartered Institute of Management Accountants)*

**You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)**



# ISSUES IN FINANCIAL REPORTING



## Introduction

This part looks at the theories upon which accounting practice is based, considers issues affecting accounting and financial reporting and reviews the place of accounting information in the context of the environment in which business entities operate.

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# Accounting theory

## Learning objectives

After you have studied this chapter, you should be able to:

- explain that there is no one overall accepted general theory of accounting
- describe some of the possible valuation alternatives to historical cost
- explain the difference between current purchasing power and current cost accounting
- describe the characteristics of useful information
- describe problems relating to the production of accounting information

## Introduction

This chapter is in three parts: general accounting theory; accounting for changing price levels; and the objectives of financial statements. You will learn about asset valuation, the concept of wealth measurement, the needs of the users of accounting information, and about the problems inherent in the production of accounting information.

## Part I GENERAL ACCOUNTING THEORY

### 29.1 Background

To many students it will seem strange that a discussion of accounting theory has been left until this late stage of the book. Logically you could argue that it should have preceded all the practical work.

The reason for not dealing with theory at the beginning is simple. From a teaching point of view, it could easily have confused you, and made it more difficult to assimilate the basic rules of accounting. The terms used in theory, such as what is meant in accounting by capital, liabilities, assets, net profit and so on, would not then have been understood. Leaving it until now, if theory points out what is wrong with accounting methods, at least you know those methods. Theory taught in a vacuum is counterproductive for most students.

In the discussion which follows, we want you to remember that this is your first proper look at accounting theory. We do not intend it to be an exhaustive examination, but simply an introduction to give you an overall appreciation. If you carry your studies to a higher level you will have to study accounting theory in much greater depth.

## 29.2 An overall accepted theory?

It would not be surprising if you were expecting to read here exactly what the overall accepted theory of accounting is, and then proceed to examine the details later. Unfortunately, there is no such ‘accepted’ theory. This is much regretted by those accountants who have chosen an academic life. To practising accountants, accounting is what accountants do, and they feel theory has little place in that. Such a narrow view is to be deprecated. The reality, however, is that accounting theory provides a general frame of reference by which accounting practices can be judged and it also guides the way to the development of new practices and procedures.

The lack of an accepted theory of accounting does not mean that it has not been attempted; there have been numerous attempts. At first an inductive approach was tried – i.e. one that tried to create a theory from a few examples. For example, if you saw a white swan, you might induce the theory that all swans are white (which they are not). The practices of accountants were observed and analysed to see if any consistent behaviour could be detected. This was done in the hope that if a general principle was identified, everyone could be led towards applying it. The inductive approach failed.

It was impossible to find consistent patterns of behaviour amongst the mass of practices that had developed over the years. Also, such an approach would not have brought about any important improvements in accounting practices, as it looked at ‘what accountants do’ rather than ‘what accountants should be doing’.

A different approach emerged in the 1950s. It was a **normative approach**, in that it aimed to improve accounting practice. It looked at what accountants should be doing rather than at what they did. However, it also included elements of the inductive approach in attempting to derive rules based on logical reasoning when given a set of objectives. The combination of these approaches has been promising, but the main problem has been a lack of a general agreement as to the objectives of accounting.

As you might expect, attention then switched towards a less ambitious approach. This is based, first, on identifying the users of financial statements, and then finding out what kind of information they require. Such an approach was used in *The Corporate Report*, sponsored by the government and published in 1975. We will look later at the user groups which were identified. The other important report using this approach was that of the Sandilands Committee (also sponsored by the government and published in 1975). This will also be considered more fully later.

### Activity 29.1

Should accountants give the user groups the information they are asking for, or the information for which they should be asking?

Another point which will be considered later is whether only one report should be issued for all user groups, or whether each group should have its own report.

Having had an overall look at how theory construction is proceeding, we can now turn to look at theory in more detail.

## 29.3 Measurement of income

The syllabus uses the word ‘income’, but the term ‘net profit’ means exactly the same. (In accounting, we use the term ‘revenue’ when describing receipts arising from sales transactions. In accounting, the term ‘income’ does *not* have this meaning.) In this book the calculation of net profit is done within fairly strict guidelines. Chapter 10 in *Frank Wood’s Business Accounting 1* provided guidance on the overall concepts ruling such calculations. However, just because the

business world and the accounting profession use this basic approach does not mean it is the only one available. We will now consider possible alternatives to the basic method.

Let's start by looking at the simplest possible example of the calculation of profit, where everyone would agree with the way it is calculated. John is starting in business, his only asset being cash £1,000. He rents a stall in the market for the day, costing him £40. He then buys fruit for cash £90, and sells it all during the day for cash £160. At the end of the day John's only asset is still cash:  $£1,000 - £40 - £90 + 160 = £1,030$ . Everyone would agree that his profit for that day was £30, i.e.  $£160 \text{ sales} - £90 \text{ purchases} - £40 \text{ expenses} = £30$ . In this case his profit equals the increase in his cash.

Suppose that John now changes his style of trading. He buys the market stall, and he also starts selling nuts and dried fruit, of which he can keep a stock from one day to another. If we now want to calculate profit we cannot do it simply in terms of cash, we will also have to place a value both on the stock of fruit and nuts and on his stall, at both the beginning and the end of each day.

The argument just put forward assumes that we can all agree that profit represents an increase in wealth. It assumes that John will make a profit for a period if either:

- (a) he is better off at the end of the period than he was at the beginning; or
- (b) he would have been better off at the end than at the beginning had he not consumed some of the profits by taking drawings.

The Nobel prize winning economist Sir John Hicks expressed the view that profit was the maximum value which a person could consume during a period and still be as well off at the end of the period as at the beginning. You will learn later about the rules governing the calculation of profit. In a sense, profit is very much the same as income – what you have left after you subtract all your expenses from your receipts is your 'income'. (Accountants call it 'net income' or 'net profit' but, for simplicity, let's just call it 'income' for the time being.)

In terms of a limited company, the Sandilands Committee, which will be mentioned in greater detail later, said that a company's profit for the year is the maximum value which the company can distribute as dividends during the year, and still be as well off at the end of the year as it was at the beginning. There are some important questions here which need answering. They are:

- 1 How can we measure wealth at the beginning and end of a period?
- 2 How do we measure the change in wealth over a period?
- 3 Having measured wealth over a period, how much can be available for consumption and how much should not be consumed?

There are two main approaches to the measurement of wealth of a business:

- (a) by finding the values of the individual assets of a business and then subtracting from them the value of the individual liabilities of the business;
- (b) by measuring the expectation of future benefits. (This involves calculating something known as the 'present value of expected future net cash flows'. You will be covering this topic in Chapters 45 and 46.)

From these, you can see that in order to measure wealth, you must first identify the value of your assets and liabilities or the value of your future net cash flows.

### Activity 29.2

If you paid £1,000 for a computer, what value would you say it had?

Arriving at an acceptable value for a fixed asset is not nearly as simple as it appears. Firstly, you need to know what the term 'value' means. It is rather more than just the amount paid or the amount something is sold for. You need to consider the context – a glass of water has a lot more value in a desert than in London. If you have studied any economics, you will know that the availability of something dictates its value to the purchaser. And, from an accounting



perspective, once you own something, the value you place on it may not be what you paid for it and the basis of valuation that you use needs to be acceptable in the context of accounting.

Let's now look at the different methods that can be used to value assets.

## 29.4 Asset valuation alternatives

### 1 Historical cost

This is the most commonly applied method and you will be using it throughout your accounting studies. The principles underpinning it are quite simple. An asset is valued at what it cost, less an amount representing the effect of its use so far upon that value.

Taking the computer costing £1,000 as an example. Let's assume it was expected to be used for four years before being scrapped. As it would last four years, each year its value would reduce by a quarter of what was paid for it. That is, it would be reduced by £250 every year. At the end of two years, it would have a value of £500 (£1,000 – £250 – £250).

This seems quite simple, except that someone needs to decide by how much to reduce its value by each year. Why was four years chosen for the useful economic life of the computer? Why not three or five? Why was it assumed that it would lose value equally each year? This depreciation adjustment is just one example of how imprecise accounting can be in relation to arriving at a value for something. There is no one 'true' answer; the choice of method, expected length of use of the asset, etc., is quite arbitrary.

Let's look at a couple of other examples.

- 1 Stocks to be used during the period can be charged out at FIFO (first in, first out), LIFO (last in, first out), AVCO (average cost method) for stock valuation, and so on. There is no one 'true' figure.
- 2 Suppose we buy a block of assets, e.g. we take over the net assets of another organisation. How do we allocate the cost exactly? There is no precise way, we simply use a 'fair value' for each asset. As you know, any difference between the cost and total of the fair values is treated as goodwill.

### 2 Adjusted historical cost

Because of the changes in the value or purchasing power of money, the normal historical cost approach can be very unsatisfactory. Take the case of a buildings account. In it we find that two items have been debited. One was a warehouse bought in 1970 for £100,000 and the other an almost identical warehouse bought in 1995 for £400,000. These two figures are added together to show cost of warehouses £500,000 – quite clearly a value which has little significance.

To remedy this defect, the original historical cost of an asset is adjusted for the changes in the value or purchasing power of money over the period from acquisition to the present balance sheet date. The calculations are effected by using a price index.

This method does not mean that the asset itself is revalued. What is revalued is the money for which the asset was originally bought. This method forms the basis of what is known as **current purchasing power** accounting, abbreviated as CPP. During the early 1980s when inflation in the UK was high, many companies produced financial accounting information based on CPP.

The method does not remove the problem of the 'true' cost. All it does is to assume the original historical cost was accurate and then adjust the value of the business (and, hence, the owner's wealth) to allow for the different timings.

To illustrate how it works, let's take an instance which works out precisely, just as the proponents of CPP would wish.

A machine which will last for five years, depreciated using the straight line method, was bought on 1 January 20X4 for £5,000. On 1 January 20X6 exactly the same kind of machine

(there have been no technological improvements) is bought for £6,000. The price index was 100 at 1 January 20X4, 120 at 1 January 20X6 and 130 at 31 December 20X6. The machines would appear in the balance sheet at 31 December 20X6 as follows, the workings being shown in the box alongside.

	<i>Historical cost £</i>	<i>Conversion factor £</i>		<b>Balance sheet CPP at 31 Dec 20X6 £</b>
Machine 1	5,000	130/100	6,500	
Machine 2	6,000	130/120	<u>6,500</u>	13,000
Less Depreciation				
Machine 1	3,000	130/100	3,900	
Machine 2	1,200	130/120	<u>1,300</u>	(5,200)
				<u>7,800</u>

You can see that the CPP balance sheet shows two exactly similar machines at the same cost, and each has been depreciated £1,300 for each year of use. In this particular case CPP has achieved exactly what it sets out to do, namely put similar things on a similar basis.

Underlying this method are the problems inherent in the price index used to adjust the historical cost figures. Any drawbacks in the index will result in a distortion of the adjusted historical cost figures.

### Activity 29.3

To summarise, what are the potential flaws in this method?

## 3 Replacement cost

Replacement cost, abbreviated as RC, is the estimated amount that would have to be paid to replace the asset at the date of valuation. You will often see it referred to as an 'entry value' as it is the cost of an asset entering the business.

How do we 'estimate' the replacement cost? As we are not, in fact, replacing the asset we will have to look at the state of the market at the date of valuation. If the asset is exactly the same as those currently being traded, perhaps we can look at suppliers' price lists.

Even with exactly the same item, there are still problems. Until you have actually negotiated a purchase it is impossible to say how much discount you could get – you might guess but you could not be certain. Also, if the asset consists of, say, ten computers, how much discount could you get for buying ten computers instead of one?

And that's the 'easy' one! What do you do when you are trying to find out these figures for assets that are no longer available? Technological change has greatly speeded up in recent years. If there is a second-hand market, it may be possible to get a valuation. However, in second-hand markets the price is often even more subject to negotiation. It becomes even more complicated when the original asset was specially made and there is no exactly comparable item, new or second-hand.

The difficulties outlined above mean that solutions to valuation can be sought under three headings:

- 1 Market prices.** There will often be a market, new or second-hand, for the assets. For instance, this is particularly true for motor vehicles. However, if your asset differs in some way from the one you found the price of, an adjustment may be necessary to the value, thus decreasing the reliability of the value you place on the asset.
- 2 Units of service.** Where a market price cannot be found, a value can be placed based upon the units of service (or output) which the asset can provide.

For example, take a machine that it is estimated will be able to produce another 1,000 items before it is scrapped. A new but different machine would be expected to produce 5,000 of the same items before being scrapped. The old machine can be given a value equal to one-fifth of the cost of the new machine. However, if the costs of operating the two machines differ, this would need to be taken into account when arriving at the valuation figure for the old machine.

- 3 **Cost of inputs.** If the asset was made or constructed by the owner, it may be possible to calculate the cost of replacing it at the balance sheet date. Present rates of labour and materials costs could be worked out to give the replacement cost.

#### Activity 29.4

What flaw can you see in this method?

## 4 Net realisable value

Net realisable value means the estimated amount that would be received from the sale of the asset less the estimated costs on its disposal. The term **exit value** is often used as it is the amount receivable when an asset leaves the business.

A very important factor affecting such a valuation is the conditions under which the assets are to be sold. To realise in a hurry would often mean accepting a very low price. Look at the sale prices received from stock from bankruptcies – usually very low figures. The standard way of approaching this problem is to value as though the realisation were ‘in the normal course of business’. This is not capable of a precise valuation, as economic conditions change and the firm might never sell such an asset ‘in the normal course of business’.

The difficulties of establishing an asset’s net realisable value are similar to those of the replacement value method when similar assets are not being bought and sold in the marketplace. However, the problems are more severe as the units of service approach cannot be used, since that takes the seller’s rather than buyer’s viewpoint.

## 5 Economic value (present value)

As any economist would be delighted to tell you, they would value an asset as the sum of the future expected net cash flows associated with the asset, discounted (adjusted) to its present value (what the cash flows would be worth today). For example, £20 in a year’s time might only be able to buy goods that today could be purchased for £19. The technicalities of discounting are discussed in Chapters 45 and 46.

Certainly, if you really did know (not guess) the future net cash flows associated with the asset and you had the correct discount rate, your valuation would be absolutely correct. The trouble is that it is impossible to forecast future net cash flows with certainty, neither will we necessarily have chosen the correct discount rate. It is also very difficult to relate cash flows to a particular asset, since a business’s assets combine together to generate revenue.

Before considering the next method, you may find it helpful to see four of these methods compared in the contexts of time and valuation base.

### Exhibit 29.1 Four methods of valuation in the contexts of time and valuation basis

	<i>Past</i>	<i>Present</i>	<i>Future</i>
<i>Entry value</i>	Historical cost	Replacement cost	
<i>Exit value</i>		Realisable value	Present value

## 6 Deprival value

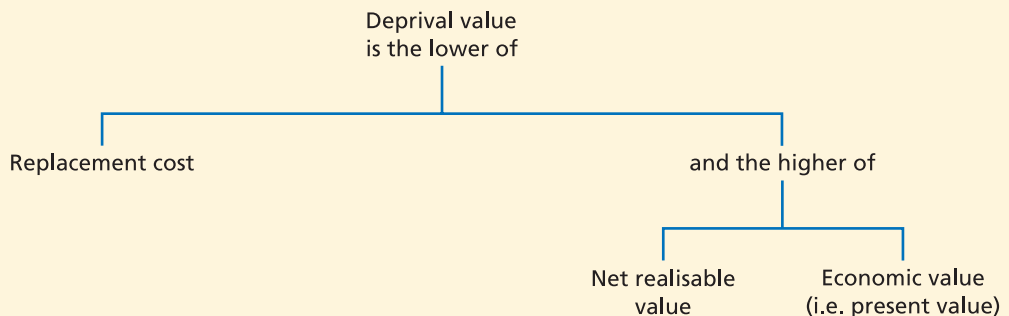
The final concept of value is based on ideas propounded in the USA by Professor Bonbright in the 1930s, and later developed in the UK for profit measurement by Professor W T Baxter.

**Deprival value** is based on the concept of the value of an asset being the amount of money the owner would have to receive to compensate him exactly for being deprived of it. We had better point out immediately that the owner does not have to be deprived of the asset to ascertain this value, it is a hypothetical exercise. This leads to a number of consequences.

- (a) Deprival value cannot exceed replacement cost, since if the owner were deprived of the asset he could replace it for a lesser amount. Here we will ignore any costs concerned with a delay in replacement.
- (b) If the owner feels that the asset is not worth replacing, its replacement cost would be more than its deprival value. The owner simply would not pay the replacement cost, so the value to the owner is less than that figure.
- (c) If the asset's deprival value is to be taken as its net realisable value, that value must be less than its replacement cost. It would otherwise make sense for someone to sell the asset at net realisable value and buy a replacement at a lower cost. Again, delays in replacement are ignored.
- (d) Take the case where an owner would not replace the asset, but neither would he sell it. It is possible to envisage a fixed asset which has become obsolete but might possibly be used, for example, when other machines break down. It is not worth buying a new machine, as the replacement cost is more than the value of the machine to the business. Such a machine may well have a very low net realisable value. The benefit to the business of keeping such a machine can be said to be its 'value in use'. This value must be less than its replacement cost, as pointed out above, but more than its net realisable value, for otherwise the owner would sell it.

It is probably easier to summarise how to find deprival value by means of the diagram in Exhibit 29.2.

### Exhibit 29.2 Deprival value



Deprival values can be illustrated by a few examples, using assets A, B and C.

	Asset A	Asset B	Asset C
	£	£	£
Replacement cost (RC)	1,000	800	600
Net realisable value (NRV)	900	500	400
Economic value (EV)	2,000	700	300

The deprival values can be explained as follows. Check them against Exhibit 29.2.

- (a) *Asset A.* If the firm were deprived of asset A, what would it do? As economic value is greater than replacement cost it would buy another asset A. The deprival value to the business is therefore £1,000, i.e. replacement cost.
- (b) *Asset B.* If deprived of asset B, what would the firm do? It would not replace it, as RC £800 is greater than its value to the business – its economic value £700. If deprived, the firm would therefore lose the present value of future cash flows, i.e. economic value £700. This then is the deprival value for asset B.
- (c) *Asset C.* With this asset there would be no point in keeping it, as its economic value to the firm is less than the firm could sell it for. Selling it is the logical way, so the deprival value is net realisable value £400.

## 29.5 Capital maintenance

Let's go back to Sir John Hicks's definition of income (profit): 'A man's income is the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning.'

We've looked at the different ways assets may be valued so that they can be added together to find the wealth or 'well-offness' of a business at a particular date. Now, let's examine the problems of measuring the maintenance of wealth over a period. This is called *capital maintenance*.

Capital maintenance is the basic method of measuring maintenance of wealth used in accounting. If a business has a value (called its 'net worth') according to its financial statements of £100,000 on 1 January 20X1 it must also have a value in its financial statements of £100,000 at 31 December 20X1 to be as well off at the end of the period. Take the example of a company that has neither issued (sold) nor redeemed (bought back) any of its share capital (shares) and has paid no dividends. If it started with a value according to its financial statements of £100,000 on 1 January 20X2 and finished with a value in its financial statements of £170,000 on 31 December 20X2, it must have made a profit of £70,000.

This approach is known as 'money capital maintenance'. It would be acceptable to everyone in a period when there is no change in price levels. However, most people would agree that it is not satisfactory when either prices in general, or specific prices affecting the business, are changing. In these two cases, to state that £70,000 profit has been made in 20X2 completely ignores the fact that the £100,000 at 1 January 20X2 and the £100,000 at 31 December 20X2 do not have the same value. That is, the purchasing power of £100,000 has changed between the two dates.

From this we can see the possibilities of three different concepts.

- 1 **Money capital maintenance.** The traditional system of accounting as already described.
- 2 **Real capital maintenance.** This concept is concerned with maintaining the general purchasing power of the equity shareholders. This takes into account changes in the purchasing power of money (i.e. inflation) as measured by the retail price index.
- 3 **Maintenance of specific purchasing power of the capital of the equity.** This uses a price index which is related to the specific price changes of the goods in which the firm deals.

From these we can look at the following example, which illustrates three different figures of profit being thrown up for a firm.

## 29.6 A worked example

A company has only equity share capital. Its net assets on 1 January 20X5 are £1,000, and on 31 December 20X5 £1,400. There have been no issues or withdrawal of share capital during the

year. The general rate of inflation, as measured by the retail price index, is 10 per cent, whereas the specific rate of price increase for the type of goods in which the company deals is 15 per cent. The profits for the three measures are as follows:

	(a) <i>Money maintenance of capital</i>	(b) <i>Real capital maintenance</i>	(c) <i>Maintenance of specific purchasing power</i>
	£	£	£
Net assets 31 Dec 20X5	1,400	1,400	1,400
Less What net assets would have to be at 31 Dec 20X5 to be as well off on 1 Jan 20X5			
(a) Money maintenance	(1,000)		
(b) Real capital £1,000 + 10%		(1,100)	
(c) Specific purchasing power maintenance £1,000 + 15%			(1,150)
Profit	<u>400</u>	<u>300</u>	<u>250</u>

Note that under the three methods:

- (a) here the normal accounting method gives £400 profit;
- (b) this case recognises that there has been a fall in the purchasing power of money;
- (c) this takes into account that it would cost £1,150 for goods whose value at the start of the year was £1,000.

## 29.7

### Combinations of different values and capital maintenance concepts

We have just looked at three ways of calculating profits based on historical cost allied with three capital maintenance concepts. This can be extended by using replacement cost or net realisable value instead. Each of these, when adjusted by each capital maintenance concept, will give three separate figures for profit. Together the three different means of valuation, multiplied by three different concepts of capital maintenance, will give us nine different profit figures.

At this stage in your studies it will be difficult to understand how such different profit measures could be useful for different purposes. We can leave this until your studies progress to more advanced examinations. However, we can use one simple example to illustrate how using only the traditional way of calculating profits can have dire consequences.

## 29.8

### Another worked example

A company has net assets on 1 January 20X7 of £100,000 financed purely by equity share capital. During 20X7 there has been no injection or withdrawal of capital. At 31 December 20X7 net assets have risen to £115,000. Both the retail price index and the specific price index for the goods dealt in have risen by 25 per cent. Taxation, based on traditional historical cost calculations (maintenance of money capital), is at the rate of 40 per cent. The profit may be calculated as follows.

	<i>Maintenance of money capital</i>	<i>Maintenance of real capital and of specific purchasing power</i>
	£	£
Net assets on 31 Dec 20X7	115,000	115,000
Less Net assets needed to be as well off at 31 Dec 20X7 as with £100,000 on 1 Jan 20X7		
(a) Money capital	(100,000)	
(b) Both real capital and specific purchasing power £100,000 + 25%		(125,000)
Profit/loss	<u>15,000</u>	<u>( 10,000)</u>

Tax payable is  $£15,000 \times 40\% = £6,000$ . Yet the real capital or that of specific purchasing power has fallen by £10,000. When tax is paid, that would leave us with net assets of  $£115,000 - £6,000 = £109,000$ . Because of price changes, £109,000 could not finance the amount of activity financed by £100,000 one year before. The operating capacity of the company would therefore be reduced.

Obviously it is not equitable for a company to have to pay tax on what is in fact a loss. It is only the traditional way of measuring profits that has thrown up a profit figure.

## 29.9 Operating capital maintenance concept

This approach looks at the output which could be generated by the initial holding of assets. A profit will only be made if the assets held at the end of the period are able to maintain the same level of output.

A simple example of this is that of a newspaper seller who sells newspapers on a street corner. The only costs the newspaper seller incurs are those of buying the newspapers. No other products are sold and the newspaper seller has no assets apart from the newspapers. In this case the operating capital consists solely of newspapers.

Under historical cost, a newspaper seller will recognise a profit if the revenue from the sale of newspapers is greater than the historical cost of the newspapers. Using the operating capital maintenance concept, the newspaper seller will recognise a profit only if the revenue from the sale is greater than the cost of buying the newspapers to replace the newspapers sold.

## 29.10 Summary

You should now be aware that there are a large number of alternative ways in which wealth can be measured. Accounting has tended always to use the simplest: historical cost. However, there have been occasions – during periods of high inflation, for example – when another method has been used. Another exception to historical cost is that net realisable value and replacement cost are both used when businesses need to value their unsold goods for resale at the end of periods.

## Part II ACCOUNTING FOR CHANGING PRICE LEVELS

### 29.11 Background

As you have seen already in this chapter, changes in price levels can lead to both profit and asset valuation figures being far from reality if simple historical cost figures are used. This is not a



recently observed phenomenon. As far back as 1938, Sir Ronald Edwards wrote several classic articles which were published in *The Accountant*. You can find these in the book *Studies in Accounting Theory*, edited by W T Baxter and S Davidson and published by the Institute of Chartered Accountants (London, 1977).

The greater the rate of change in price levels, the greater the distortion. The clamour for changes to simple historical cost accounting is noticeably greater when the inflation rate is high – at such times the deficiencies of historical cost financial statements are most obvious. If there were a period of deflation, however, the historical cost financial statements would be still misleading.

In certain countries the annual rate of inflation in recent years has been several hundred per cent. Historical cost financial statements in those countries would certainly be at odds with financial statements adjusted for inflation. In the UK the highest rate in recent years, based on the RPI, was 17.8 per cent for 1979, falling to less than 5 per cent in some years.

We can now look, in outline only, at suggestions made in the UK since 1968 as to methods which could be used to adjust financial statements for changing price levels.

## 29.12 Current purchasing power (CPP)

This proposal is something you have already read about. It is the adjustment of historical cost accounting figures by a price index figure to give figures showing what we called real capital maintenance. It will convey more of the problems and uncertainties facing the accounting profession in this regard, if we look at the history of the various proposals.

First came *Accounting for Stewardship in a Period of Inflation*, published in 1968 by the Research Foundation of the Institute of Chartered Accountants in England and Wales (ICAEW). Stemming from this came Exposure Draft No 8 (ED 8), published in 1973. ED 8 contained the proposal that companies should be required to publish, in addition to their conventional financial statements, supplementary statements which would be, in effect, their final financial statements amended to conform to CPP principles. In May 1974 a Provisional Statement of Standard Accounting Practice No 7 ([P]SSAP 7) was published. Notice the sign of uncertainty; it was a *provisional* standard – the only one yet published. Compared with ED 8, which said that a company should be *required* to publish CPP financial statements, [P]SSAP 7 simply *requested* them to publish such financial statements. Many companies would not accede to such a request.

[P]SSAP 7 stipulated that the price index to be used in the conversion of financial statements from historical cost should be the retail price index (RPI). As the actual price index relating to the goods dealt in by the firm might be quite different from RPI, the CPP financial statements could well be distant from the current values of the firm itself.

The exact nature of the calculations needed for CPP financial statements is not part of your syllabus, and we will not repeat the calculations here.

Many people, including the government, were completely dissatisfied with the CPP approach. After ED 8 was issued the government set up its own committee of inquiry into inflation accounting. The chairman of the committee was Sir Francis Sandilands. The report, known as the Sandilands Report, was published in September 1975.

## 29.13 Current cost accounting (CCA)

The Sandilands Committee's approach was quite different from ED 8 and [P]SSAP 7. The committee recommended a system called **current cost accounting** (CCA). This basically approved the concept of capital maintenance as the maintenance of operating capacity.

After the Sandilands Report appeared, the accounting bodies, as represented by their own Accounting Standards Committee (ASC), abandoned their proposals in [P]SSAP 7. A working



party, the Inflation Accounting Steering Group (IASG), was set up to prepare a Statement of Standard Accounting Practice based on the Sandilands Report.

This group published ED 18: *Current cost accounting* in November 1976. It was attacked by many members of the ICAEW, whose members passed, in July 1977, a resolution rejecting compulsory use of CCA. However, the government continued its support, and in November 1977 the accounting profession issued a set of interim recommendations called the Hyde Guidelines (named after the chairman of the committee). The second exposure draft, ED 24, was issued in April 1979, followed by SSAP 16 in March 1980. SSAP 16 was to last three years to permit the evaluation of the introduction of CCA. After this, ED 35 was published in July 1984.

In November 1986 the CCAB Accounting Standards Committee published its handbook, *Accounting for the Effects of Changing Prices*. At the same time presidents of five of the leading accountancy bodies issued the following statement:

The presidents of five of the leading accountancy bodies welcome the publication by the CCAB Accounting Standards Committee of its Handbook on *Accounting for the effects of changing prices*.

The presidents endorse the CCAB Accounting Standards Committee's view that, where a company's results and financial position are materially affected by changing prices, historical cost accounts alone are insufficient and that information on the effects of changing prices is important for an appreciation of the company's results and financial position. The presidents join the Accounting Standards Committee in encouraging companies to appraise and, where material, report the effects of changing prices.

The five bodies have proposed that SSAP 16, 'Current cost accounting', which was made non-mandatory by all the CCAB bodies in June 1985, should now be formally withdrawn. They take the view, however, that the subject of accounting for the effects of changing prices is one of great importance. Accordingly, they support the Accounting Standards Committee in its continuing work on the subject and agree that an acceptable accounting standard should be developed.

*The Institute of Chartered Accountants in England and Wales; The Institute of Chartered Accountants of Scotland; The Institute of Chartered Accountants in Ireland; The Chartered Institute of Management Accountants; The Chartered Institute of Public Finance and Accountancy*

So once again the idea of forcing companies to produce financial statements adjusted for changing prices was rejected. The emphasis is now on encouragement, rather than trying to force companies to do it.

The reason why, at this early stage in your studies, we have given you some of the history behind the efforts to compel companies to produce CCA financial statements is to illustrate the conflicts that have taken place inside and outside the accountancy profession. Opinions on the merits of CCA financial statements are widely divided. You will study this in greater detail in the later stages of more advanced examinations, but it should be made clear at the outset that it is a controversial topic.

## 29.14 Handbook on Accounting for the Effects of Changing Prices

We can now look at the main outline of this handbook. The ASC encouraged companies to co-operate in an attempt to produce financial statements suitable for the effects of changing price levels. In doing this it did not try to recommend any one method, or even recommend one way only of publishing the results. The handbook says that the information may be presented:

- (a) as the main financial statements; or
- (b) in the notes to the financial statements; or
- (c) as information supplemental to the financial statements.

The handbook first examines the problems.

## 29.15 Problems during a period of changing price levels

Obviously, the greater the rate of change, the greater will be the problems. We can now list some of them.

- 1 **Fixing selling prices.** If you can change your prices very quickly, an extreme case being a market trader, this problem hardly exists. For a company setting prices which it is expected to maintain for a reasonably long period, the problems are severe. It dare not price too highly, as early demand may be reduced by an excessive price; on the other hand, the company has to guess how prices are going to change over a period so that sufficient profit is made.
- 2 **Financial planning.** As it is so difficult to guess how prices are going to change over a period, planning the firm's finances becomes particularly trying. Obviously, it would be better if the plans were revised frequently as conditions changed.
- 3 **Paying taxation and replacing assets.** We have seen earlier how, during a period of inflation, traditional historical accounting will tend to overstate profits. Such artificial profits are then taxed. Unless various supplementary tax allowances are given, the taxation paid is both excessive and more than true profits, adjusted for inflation, can bear easily. This tends to lead to companies being short of cash, too much having been taken in tax. Therefore, when assets which have risen in price have to be replaced, adequate finance may not be available.
- 4 **Monetary assets.** If stocks of goods are held, they will tend to rise in money terms during a period of inflation. On the other hand, holding monetary assets, e.g. cash, bank and debtors, will be counterproductive. A bank balance of £1,000 held for six months, during which the purchasing power of money has fallen 10 per cent, will in real terms be worth only 90 per cent of its value six months before. Similarly, in real terms, debt of £5,000 owed continually over that same period will have seen its real value fall by 10 per cent.
- 5 **Dividend distribution.** Just as it is difficult to calculate profits, so is it equally difficult to decide how much to pay as dividends without impairing the efficiency and operating capability of the company. At the same time the shareholders will be looking to payment of adequate dividends.

## 29.16 Solutions to the problems

The handbook recommends the use of one of two concepts. These will now be examined fairly briefly, in as much detail as is needed at this stage of your examinations.

### 1 Profit under the operating capital maintenance concept

This has been mentioned previously, with a simple example given of a trader buying and selling newspapers. Under this concept several adjustments are needed to the profit calculated on the historical cost basis. Each adjustment is now considered.

#### Adjustment 1: holding gains and operating gains

Nearly all companies hold fixed assets and stocks. For each of these assets the opportunity cost will bear little relationship to its historical cost. Instead it is the asset's value to the business at date of consumption, and this is usually the replacement cost of the asset.

Accordingly the historical cost profit, which was based on money capital maintenance, can be divided into two parts.

- 1 Current cost profit, or operating gains. This is the difference between sales revenue and the replacement cost of the assets.
- 2 Holding gains. This is the replacement cost of the assets less the historical cost of those assets.

For example, a company buys an asset for £1,000 on 1 January 20X4. It holds it for one year and sells it for £1,600 when the replacement cost is £1,200. There has been a historical cost profit of £600. This can be analysed as in Exhibit 29.3.

### Exhibit 29.3

#### Profit for 20X4

	£
Historical cost profit (£1,600 – £1,000)	600
Less Holding gain (£1,200 – £1,000)	(200)
Current cost profit (or operating gain)	<u>400</u>

To put it another way, the company makes £200 historical profit by simply holding the asset from when its replacement cost (i.e. original cost) was £1,000, until the date of sale when its replacement cost was £1,200. The actual current cost profit at point of sale must reflect conditions at the date of sale, i.e. the company has sold for £1,600 something which would currently cost £1,200 to replace. The current cost profit is therefore £400.

The holding gains are often described as a cost of sales adjustment (COSA).

### Adjustment 2: depreciation

Depreciation is to be adjusted to current replacement cost values. Without going into complicated examples, this means that if the historical cost of depreciation is £4,000 and the current cost of depreciation, based on current replacement cost values, is £7,000, then the adjustment should be £3,000 as follows:

	£
Depreciation based on historical cost	4,000
Adjustment needed to bring depreciation charge to CCA basis	<u>3,000</u>
CCA depreciation	<u>7,000</u>

### Adjustment 3: monetary working capital adjustment

The monetary working capital needed to support the operating capability of the business will be affected by inflation. An adjustment will be needed to the historical profits in respect of this.

### Adjustment 4: gearing adjustment

If we borrow £1,000 now, and have to pay back exactly £1,000 in five years' time, we will gain during a period of inflation. We will be able to put the £1,000 to use at current purchasing power. In five years' time, if £1 now is worth only 60p then, we will have gained because we will only be giving up £600 of current purchasing power now. The gearing adjustment is an attempt to adjust current cost operating profits for this factor.

## 2 Profit and loss account based on the operating capital maintenance concept

A general idea of how such a profit and loss account could appear can now be given.

**RST Ltd**  
**Profit and Loss Account incorporating Operating Capital**  
**Maintenance Concept adjustments**

	£	£
Profit on the historical cost basis, before interest and taxation		100,000
Less Current cost operating adjustments:		
(1) Holding gains (COSA)	15,000	
(2) Depreciation	10,000	
(3) Monetary working capital	<u>5,000</u>	
		(30,000)
Current cost operating profit		70,000
(4) Gearing adjustment	(2,000)	
Interest payable less receivable	<u>6,000</u>	
		( 4,000)
Current cost profit before taxation		66,000
Taxation		(25,000)
Current cost profit attributable to shareholders		41,000
Dividends		(30,000)
Retained current cost profit for the year		<u>11,000</u>

### 3 Profit under the financial capital maintenance concept

According to the handbook, this method is sometimes known as the ‘real terms’ system of accounting. The steps by which the profit is calculated can be summarised as:

- (a) calculate shareholders’ funds at the beginning of the period, based on current cost asset values; then
- (b) restate that opening amount in terms of pounds at the end of the period, by adjusting (a) by the relevant change in a general price index (e.g. RPI); then
- (c) calculate shareholders’ funds at the end of the period, based on current cost values.

Assuming that there have been no introductions or withdrawals of capital, including dividends, if (c) is greater than (b) a ‘real terms’ profit will have been made. Otherwise a loss will have been incurred.

Allowance will have to be made in steps (a) to (c) above where there have been introductions or withdrawals of capital, or where there have been dividends.

The calculation of ‘real terms’ profit, as described, has been by way of comparing opening and closing balance sheets. Suppose that the ‘real terms’ profit figure had been £10,000, it could in fact have been calculated in the following manner:

	£	£
Historical cost profit		7,800
Add Holding gains: the amount by which the current costs of the assets have increased over the period	3,400	
Less Inflation adjustment: the amount by which general inflation has eroded shareholders’ funds	<u>(1,200)</u>	
Real holding gains		<u>2,200</u>
Total real gains		<u>10,000</u>

The balance sheet approach was described first, as it is probably the easier to understand in the first instance. Obviously the link between opening and closing balance sheets can be traced to total real gains, which can also be explained using the profit and loss account concept.

## 4 Current cost balance sheet

The two main differences between a current cost balance sheet and a historical cost balance sheet are as follows:

- 1 Assets are shown at value to the business on the balance sheet date, rather than at any figure based on historical cost or at any previous revaluation.
- 2 Obviously the balance sheet would not balance if asset values were altered without an amendment somewhere else. A current cost reserve account is opened, additions to historical cost account values are debited to each asset account, while a credit will be made in the current cost reserve account. Entries are also made here to complete the double entry in respect of the four adjustments in the current cost profit and loss account. As a result, all double entry adjustments are made in this account and so the balance sheet will now balance.

### 29.17 More on current cost accounting

Chapter 30 explores this topic further.

## Part III OBJECTIVES OF FINANCIAL STATEMENTS

### 29.18 Background

In any consideration of asset valuation and wealth measurement, it is important to remember why the calculations are being made. At the end of the day, the reason is that the users of the accounting information wish them to be done.

### 29.19 Users of financial statements

The main users of published financial statements of large companies are now identified with the main reasons they require the financial statements.

- 1 **Shareholders of the company**, both existing and potential, will want to know how effectively the directors are performing their stewardship function. They will use the financial statements as a base for decisions to dispose of some or all of their shares, or to buy some.
- 2 **The loan-creditor group**. This consists of existing and potential debenture and loan stock holders, and providers of short-term secured funds. They will want to ensure that interest payments will be made promptly and capital repayments will be made as agreed. Debenture and loan stock holders, whether redeemable or irredeemable, will also want to be able to assess how easily they may dispose of their debentures or loan stocks, should they so wish.
- 3 **Employee groups**, including existing, potential and past employees. These can include trade unions whose members are employees. Past employees will be mainly concerned with ensuring that any pensions, etc., paid by the company are maintained. Present employees will be interested in ensuring that the company is able to keep on operating, so maintaining their jobs and paying them acceptable wages, and that any pension contributions are maintained. In addition, they may want to ensure that the company is being fair to them, so that they get a reasonable share of the profits accruing to the firm from their efforts. Trade unions will be upholding the interests of their members, and will possibly use the financial statements in wage and pension negotiations. Potential employees will be interested in assessing whether or not it would be worth seeking employment with the company.

- 4 **Bankers.** Where the bank has not given a loan or granted an overdraft, there will be no great need to see the financial statements. Where money is owed to the banks, they will want to ensure that payments of interest will be made when due, and that the firm will be able to repay the loan or overdraft at the correct time.
- 5 **The business contact group.** This includes trade creditors and suppliers, who will want to know whether or not they will continue to be paid, and the prospects for a profitable future association. Customers are included, since they will want to know whether or not the company is a secure source of supply. Business rivals in this group will be trying to assess their own position compared with the firm. Potential takeover bidders, or those interested in a merger will want to assess the desirability of any such move.
- 6 **The analyst/adviser group.** These will need information for their clients or their readers. Financial journalists need information for their readers. Stockbrokers need it to advise investors. Credit agencies want it to be able to advise present and possible suppliers of goods and services to the company as to its creditworthiness.
- 7 **The Inland Revenue** will need the financial statements to assess the tax payable by the company.
- 8 **Other official agencies.** Various organisations concerned with the supervision of industry and commerce may want the financial statements for their purposes.
- 9 **Management.** In addition to the internally produced management accounts the management is also vitally concerned with any published financial statements. It has to consider the effect of such published financial statements on the world at large.
- 10 **The public.** This consists of groups such as ratepayers, taxpayers, political parties, pressure groups and consumers. The needs of these parties will vary accordingly.

## 29.20

**Characteristics of useful information**

From the various reports which have appeared since 1975 the following characteristics have been noted.

- 1 **Relevance.** This is regarded as one of the two main qualities. The information supplied should be that which will satisfy the needs of its users.
- 2 **Reliability.** This is regarded as the other main quality. Obviously, if such information is also subject to an independent check, such as that of the auditor, this will considerably enhance the reliance people can place on the information.
- 3 **Objectivity.** Information which is free from bias will increase the reliance people place on it. It is, therefore, essential that the information is prepared as objectively as possible. Management may often tend to give a better picture of its own performance than is warranted, and is therefore subjective. It is the auditor's task to counter this view, and to ensure objectivity in the financial statements.
- 4 **Ability to be understood.** Information is not much use to a recipient if it is presented in such a manner that no one can understand it. This is not necessarily the same as simplicity.
- 5 **Comparability.** Recipients of financial statements will want to compare them both with previous financial statements of that company and with the results of other companies. Without comparability the financial statements would be of little use.
- 6 **Realism.** This can be largely covered by the fact that financial statements should show a 'true and fair' view. It has also been contended that financial statements should not give a sense of absolute precision when such precision cannot exist.
- 7 **Consistency.** This is one of the basic concepts, but it is not to be followed slavishly if new and improved accounting techniques indicate a change in methods.
- 8 **Timeliness.** Up-to-date information is of more use to recipients than outdated news.
- 9 **Economy of presentation.** Too much detail can obscure the important factors in financial statements and cause difficulties in understanding them.
- 10 **Completeness.** A rounded picture of the company's activities is needed.

## 29.21 Problems of information production in accounting

You have seen that a company's profit and loss account and balance sheet produced for general publication is a multi-purpose document. The present state of the art of accounting is such that we have not yet arrived at producing specific financial reports for each group of users, tailored to their special needs.

At times, companies do produce special reports for certain groups of users. A bank, for instance, will almost certainly want to see a forecast of future cash flows before granting a loan or overdraft. The Inland Revenue will often require various analyses in order to agree the tax position. Some companies produce special reports for the use of their employees. In total, such extra reports are a very small part of the reports which could be issued.

Of course, producing reports is not costless. To produce special reports, tailored to every possible group of users, would be extremely costly and time-consuming. It is hardly likely that any company would wish to do so. There is, however, no doubt that this is the way things are moving and will continue to move.

For the present, however, most companies produce one set of financial statements for all the possible users, with the exception that management will have produced its own management accounts for its own internal purposes. Obviously such a multi-purpose document cannot satisfy all the users. In fact, it will almost certainly not fully satisfy the needs of any one user group – save that it must satisfy the legal requirements of the Companies Act.

Published financial statements are, therefore, a compromise between the requirements of users and the maintenance of accounting concepts, subject to the overriding scrutiny of the auditor. Judgement has a major impact on the information presented. It can be said that if two large companies operating in the same industry and in the same location had identical share capitals, liabilities, numbers of employees, assets, turnover, costs, transactions, and so on, the published financial statements of the two companies would not be identical. Differences would arise for a number of reasons. For example, depreciation methods and policies may vary, as may stock valuation assessments, bad debt provisions, figures for revaluation of properties, etc. There will also probably be rather more subtle distinctions, many of which you will come across in the later stages of your studies.

### Learning outcomes

**You should now have learnt:**

- 1** That there is no one overall accepted general theory of accounting.
- 2** Changing price levels distort historical cost values and that various approaches have been suggested to deal with this issue.
- 3** Some of the possible valuation alternatives to historical cost.
- 4** The difference between current purchasing power and current cost accounting.
- 5** The characteristics of useful information.
- 6** About problems relating to the production of accounting information.
- 7** A wide range of user groups require accounting information for a variety of reasons, resulting in its being impossible to satisfy all user groups with one set of financial statements.

## Answers to activities

- 29.1** This isn't a problem for management accounting (which is concerned with providing information for internal use) – management and the management accountants agree on what should be produced and the management accountants do what they can to provide it. With financial accounting information, there is no such close relationship between the accountant and the user groups. There are also the legal and other regulations governing financial reports that the accountant must observe. It would not be appropriate to give all users what they want – some user groups, such as competitors, would prefer information that is sensitive to the business. At the same time, no one can foretell what information a particular user should be asking for at a given time.
- 29.2** This may appear to be an easy question. If you said it was £1,000 because that is what it cost, you would be correct so far as its *cost* to you was concerned, but no accountant would say that that was its *value*. It may have cost you that amount but do you really believe you could get someone else to pay you £1,000 for it? And how much would it cost to replace it? More, or less than £1,000?
- 29.3** CPP does not remove the problem of the 'true' cost. All it does is to assume the original historical cost was accurate and then adjust the value of the business to allow for the different timings. Also, any inaccuracies, inconsistencies, inappropriateness or other drawbacks inherent in the price index used to adjust the historical cost figures will result in a distortion of the adjusted historical cost figures.
- 29.4** Replacement cost rarely arrives at asset values that everyone would agree upon. It can be very subjective and can often be easy to dispute.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)



# Current cost accounting

## Learning objectives

After you have studied this chapter, you should be able to:

- explain why historical cost financial statements are deficient in times of rising prices
- describe different valuation methods
- describe the purposes of specific price indices for assets and liabilities
- explain the adjustments necessary in order to convert historical costs to current costs
- prepare a current cost balance sheet and current cost profit and loss account

## Introduction

In this chapter, you'll learn about the issues behind the development of current cost accounting and how to prepare current cost financial statements according to the procedures laid down in SSAP 16.

### 30.1 Background

Financial statements have traditionally been prepared for two main purposes, stewardship and decision making. The Accounting Standards Board's Exposure Draft: Statement of Principles, published in 1991, outlined several user groups with varying needs, all of whom are interested in financial information. Shareholders are interested in different information than trade creditors. This information has traditionally been provided by financial statements prepared under the historical cost convention. However, there are circumstances when financial statements prepared under this traditional approach can present financial information in a misleading way.

Consider the following example. On 1 January 20X4, a company buys 500 widgets for £1,000, i.e. £2 per widget. Shortly before the year end, when the replacement cost of a widget is £2.20, the stock is sold for £1,200. On a historical cost basis, the profit is recorded as follows:

	£
Sales	1,200
Cost of sales	(1,000)
Profit	<u>200</u>

However, in order to maintain the same operating capacity, the company will need to invest in more widgets at a cost of £1,100 ( $500 \times £2.20$ ). If the company distributes the £200 as a dividend, it will only be left with £1,000 and cannot make this investment.

**Activity  
30.1**

If you replaced the £1,000 cost of the stock in the above calculation of profit with the £1,100 it will cost to replace it, does it remind you of any of the alternatives to historical cost accounting you learnt about in Chapter 29?

From this simple example, one of the major criticisms of historical cost accounting is evident – its inability to reflect the effects of changing prices. Obviously, this criticism is dependent upon the level of inflation at the time.

An acceptable alternative to historical cost accounting has been sought by the accountancy profession in the UK for several years. The attempts of the Accounting Standards Committee (ASC) to introduce a system of inflation accounting, which are outlined in Chapter 29, failed.

The culmination of great effort and numerous exposure drafts and standards was the ASC handbook, *Accounting for the Effects of Changing Prices*, published in 1986. In Chapter 29, you started looking at some of the aspects covered in the handbook. In this chapter, we'll consider several of the issues dealt with in the handbook in the context of the preparation of a set of current cost accounts.

It is worth noting that the ASB recognises that the present system of historical cost accounting, modified by voluntary revaluations of certain assets, is unsatisfactory. The ASB aims to tackle the issue, and current values are once again on the agenda. It is unlikely, however, that a system of current cost accounting will be introduced without difficulty, particularly when inflation is at and has been at a low level in the UK for quite some time.

## 30.2 Valuation

Under historical cost accounting, assets and liabilities are recorded at their actual cost at the date of transaction. For example, when a new machine is purchased, the price per the invoice can be recorded in the books of the business. While this is a familiar and reasonably cheap method of recording the assets and liabilities of an entity, its main advantage is its objectivity. The historical cost of an item is an objective, verifiable fact that can easily be ascertained from the records of the business.

It is worth remembering that there is some degree of subjectivity in the preparation of historical cost financial statements. Consider, for example, the choice of suitable depreciation method for a fixed asset which is left to the discretion of the directors of the company. The size of the bad debts provision is also dependent upon the exercise of judgement. Notwithstanding this, it is fair to say that historical values have a high degree of reliability.

**Activity  
30.2**

Apart from the subjectivity in some of the adjustments made to the original figures, such as for depreciation, if you were asked for the main disadvantage of historical cost accounting, especially in times of rising prices, what would you say it was?

Current value accounting considers the following valuation methods which were covered in Chapter 29: economic value, value to the business (i.e. deprival value), replacement cost, net realisable value and recoverable amount.

To recap what you learnt in Chapter 29, the **economic value** of an asset is the sum of the future expected net cash flows associated with the asset, discounted to its present value. The value to the business, or **deprival value**, can be considered an appropriate valuation basis for accounting purposes. If a business is deprived of an asset, it can either replace it, or choose not

to. If the asset is replaced, then its current value to the business is its net current **replacement cost**. This is normally the current cost of a fixed asset, except where it has suffered a permanent diminution in value, in which case it will be written down to its **recoverable amount**. This may happen, for example, because there is no longer a market for the product. Alternatively, if the business chooses not to replace the asset which has diminished in value, it could sell it and its current cost becomes its **net realisable value**, i.e. the price at which it can be sold in the market.

How are these values determined by a business? The replacement cost of an asset can be approximated using a relevant index. Indices, published for example by the UK Government Statistical Service, are usually specific to a class of asset. A company may prepare its own index based on experience. The index will indicate the change in value of the asset or class of asset. Where it is not appropriate to use an index, a valuer may be relied upon. This is normal practice, for example, when revaluing property.

Consider the following example. A machine was purchased on 1 January 20X2 for £75,000 when the relevant specific price index was 90. Its current value at 31 December 20X4, when the relevant specific price index is 120, is:

$$\frac{\text{Index at accounting date}}{\text{Index at date of purchase}} \times £75,000 = \frac{120}{90} \times £75,000 = £100,000$$

Replacement does not necessarily mean replacement of the asset with a similar asset. Rather, it focuses on replacement of the service potential of the asset and its contribution to the business.

Net realisable value is the price at which the asset could be sold in an arm's-length transaction. A problem may arise where no market exists for the asset. The main problem with current values is the level of subjectivity involved in ascertaining valuations. A business may need to spend considerable time and effort ascertaining current values for its assets and liabilities.

Let's now look in detail at the principles of current cost accounting.

### 30.3 Current cost financial statements

In order to prepare current cost financial statements, a number of adjustments to the historical cost figures must be made. Specifically, **adjustments are needed relating to:**

- **fixed assets**
- **depreciation**
- **stock**
- **cost of sales**
- **monetary working capital**
- **gearing.**

**Other than the gearing adjustment, no adjustment is made to monetary assets, such as debtors, bank and cash, or to monetary liabilities such as creditors or long-term loans.**

We shall use Hillcrest Ltd to show how these adjustments are made.

The directors of Hillcrest Ltd are interested in preparing current cost accounts to reflect changing prices. They have prepared a historical cost balance sheet and profit and loss account (Exhibit 30.1). The relevant price indices for plant and machinery, stock, debtors and creditors, are given in Exhibit 30.2.

**Exhibit 30.1**

Hillcrest Ltd Balance Sheet as at 30 June (£000)		
	20X5	20X4
<i>Fixed assets</i>		
Plant and machinery		
Cost	800	800
Depreciation	(320)	(240)
Net book value	480	560
<i>Current assets</i>		
Stock	250	200
Trade debtors	180	110
Cash	105	75
	535	385
<i>Current liabilities</i>		
Trade creditors	( 90)	(100)
<i>Net current assets</i>	445	285
	925	845
10% loan stock	(310)	(310)
	615	535
<i>Financed by:</i>		
Ordinary shares	200	200
Reserves	415	335
	615	535

Hillcrest Ltd Profit and Loss Account for year ending 30 June 20X5 (£000)		
Sales		1,700
Cost of sales		
Opening stock	200	
Purchases	1,375	
	1,575	
Less Closing stock	( 250)	
		(1,325)
Gross profit		375
Interest	31	
Depreciation	80	
Other expenses	184	
		(295)
Net profit		80

In order to prepare current cost accounts, **the first step is to calculate current values for the assets.** Hillcrest Ltd's plant and machinery was purchased for £800,000 on 1 July 20X1. The current value of the plant and machinery at 30 June 20X5 is:

$$\begin{aligned}
 & \text{Plant and machinery at cost} \times \frac{\text{Index at balance sheet date}}{\text{Index at date of purchase}} \\
 &= £800,000 \times \frac{110}{80} \\
 &= £1,100,000
 \end{aligned}$$

**Exhibit 30.2***Price index for stock at the end of each month:*

March	20X4	109
April	20X4	112
June	20X4	114
December	20X4	116
March	20X5	122
April	20X5	126
June	20X5	130

Average for the year ending 30 June 20X5 126

*Plant and machinery index*

June	20X1	80
June	20X2	90
June	20X3	100
June	20X4	105
June	20X5	110

*Debtors and creditors index*

June	20X4	110
June	20X5	200
Average for	20X5	155

The accumulated depreciation of £320,000 charged in the historical cost financial statements, representing 40 per cent of the asset which has been consumed, is also restated. The current value of the depreciation is:

$$£320,000 \times \frac{110}{80} = £440,000$$

On average, Hillcrest Ltd's stock was acquired three months before the year end. Hence, its current value, rounded to the nearest £000, at 30 June 20X5 is:

$$£250,000 \times \frac{130}{122} = £266,393$$

**Monetary assets, for example trade debtors and cash, and monetary liabilities, including trade creditors, are not restated.** These items have a fixed monetary value which does not change. For example, if you borrow £1,000 today under an agreement to repay in 12 months' time, the monetary value of the amount borrowed will not change, that is you will repay £1,000. However, in times of rising prices, the market value of the amount will decrease. This gain will be dealt with later in this chapter.

## 30.4 Current cost reserve

Having revalued both plant and machinery and stock to their current values, the following revaluation gains are recorded:

	<i>Plant &amp; machinery (£)</i>	<i>Stock (£)</i>	<i>Total (£)</i>
Current book value	660,000*	266,393	
Historical book value	(480,000)	(250,000)	
Surplus on revaluation	<u>180,000</u>	<u>16,393</u>	<u>196,393</u>

\*Note: Plant at current cost less accumulated depreciation, i.e. £1,100,000 – £440,000

The total gain of £196,393 is not a gain which has been realised through a transaction, for example, sale of goods at a profit. In addition, Hillcrest Ltd cannot distribute this revaluation gain as a dividend if it wishes to maintain its operating capacity. In this example the gain of £196,393 will be credited to a non-distributable reserve called the current cost reserve. The balance sheet incorporating these revaluations is shown in Exhibit 30.3.

### Exhibit 30.3

Hillcrest Ltd	
Balance Sheet as at 30 June 20X5 (£000)	
<i>Plant and machinery</i>	
Current value	1,100
Depreciation	( 440)
Net book value	660
<i>Current assets</i>	
Stock	266
Debtors	180
Cash	105
	551
<i>Current liabilities</i>	
Trade creditors	( 90)
Net current assets	461
	1,121
10% loan stock	( 310)
	811
<i>Financed by:</i>	
Ordinary shares	200
Reserves	415
Current cost reserve	196
	811

Exhibit 30.3, however, does not incorporate the effect of changing prices on the profit for the year. The reserves figure of £415,000 includes historical cost profit of £80,000 for the year ended 30 June 20X5. We will now consider adjustments necessary in order to calculate the current cost profit for Hillcrest Ltd for the year.

## 30.5 Cost of sales adjustment

In calculating the profit for an accounting period, the cost of the goods sold (or cost of sales) is charged against sales. In Exhibit 30.1, sales of £1,700,000 are recorded at their invoiced prices during the year to 30 June 20X5. Likewise, purchases of £1,375,000 are recorded at their actual cost prices during the year. If we assume that activity occurs evenly throughout the year, a reasonable assumption unless trade is seasonal, then these figures will reflect the average prices for the period. The opening and closing stock valuations, in times of rising prices, will not reflect average prices under the historical cost convention. It is therefore necessary to adjust these figures in order to calculate the current cost of sales. This is carried out using an averaging method.

Using the price index for stock, the current cost of sales for Hillcrest Ltd is:

	£
Opening stock at average prices: £200,000 × $\frac{130}{109}$	= 238,532
Purchases (assume occur evenly through year)	= $\frac{1,375,000}{1,613,532}$
Closing stock at average prices: £250,000 × $\frac{130}{122}$	= ( 266,393)
Current cost of sales	= <u>1,347,139</u>

The cost of sales adjustment is the difference between the current cost of sales of £1,347,139 and the historical cost of sales of £1,325,000, i.e. £22,139. This is charged to the historical cost profit and loss account as an adjustment in order to arrive at the current cost profit. A corresponding amount will be credited to the current cost reserve.

## 30.6 Depreciation adjustment

**Depreciation charged in the profit and loss account should be based on the value of the asset as stated in the balance sheet. Hence, an adjustment is necessary where depreciation has been based on the historical cost of a fixed asset.**

Consider the following example in which the depreciation charge is based on the value of the asset at the year end. A fixed asset is purchased on 1 January 20X3 for £10,000 when the relevant price index is 100. It is planned to depreciate this asset on a straight line basis at 20 per cent per annum. At the end of 20X3, when the index has moved to 110, the current value of the asset is:

$$£10,000 \times \frac{110}{100} = £11,000$$

and depreciation based on current cost of the asset is:

$$£10,000 \times \frac{110}{100} \times 20\% = £2,200$$

The net book value of the asset as stated in the current cost balance sheet is:

	£
Asset at current value	11,000
Accumulated depreciation	( 2,200)
	<u>8,800</u>

At the end of 20X4 the relevant index is 120, and the current value of the asset is:

$$£10,000 \times \frac{120}{100} = £12,000$$

and the depreciation charge based on current cost is:

$$£10,000 \times \frac{120}{100} \times 20\% = £2,400$$

Hence, at the end of 20X4, the net book value of the asset in the current cost balance sheet is:

	£
Asset at current value	12,000
Accumulated depreciation	( 4,600)
	<u>7,400</u>

While 40 per cent of the value of the asset has been consumed at 31 December 20X4, it is noted that £4,600 is not 40 per cent of £12,000. This is due to an undercharge of £200 depreciation in 20X3 in current value terms. **Hence, as the original cost of the asset is altered to reflect current values, so too must the aggregate depreciation.**

The term given to depreciation relating to earlier years is **backlog depreciation**. Backlog depreciation is not charged against this period's profit. As we saw in the Hillcrest example, only an adjustment for this year's depreciation is charged against profit. **Backlog depreciation is charged to the current cost reserve.**

For Hillcrest Ltd, depreciation charged at 10 per cent on the current value of the plant and machinery of £1,100,000 is £110,000. Comparing this with the historical cost depreciation charge in the historical cost profit and loss account of £80,000 gives an additional, i.e. backlog depreciation adjustment of £30,000. This is a charge in arriving at current cost profit for the year, the corresponding credit going to the current cost reserve.

## 30.7 Monetary working capital adjustment

The effect of changing prices on stock values has already been considered. In addition, during inflationary periods, the market value of monetary assets, e.g. trade debtors, trade creditors and cash, will change. In order for a business to maintain its operating capacity, this change needs to be reflected in the accounts. **The monetary working capital adjustment represents the increase (or decrease) in finance necessary to provide an appropriate level of monetary working capital due to price changes, rather than a change in the volume of working capital.**

Cash is usually excluded from the calculation as the amount of cash held by a business may not relate to its operating activities. For example, cash may be held in order to make a capital investment. However, in the case of a bank, cash balances which are required to support daily operations are included in the **monetary working capital adjustment**.

**Calculation of the monetary working capital adjustment is similar to the calculation of the cost of sales adjustment.**

The index for debtors should reflect changes in the cost of goods or services sold which are included in debtors. Likewise, the index for creditors should reflect changes in the cost of goods or services purchased which are included in creditors. A single index may be appropriate, and in some businesses, a fair approximation may be the index used for stock. Consider the following example:

	31 December 20X4	31 December 20X5
	£	£
Trade debtors	9,000	12,000
Trade creditors	(7,500)	(11,000)
Monetary working capital	<u>1,500</u>	<u>1,000</u>

Relevant indices applicable to the business are:

31 December 20X4	100
31 December 20X5	200
Average for the year	150



The monetary working capital at 31 December 20X4 in the historical cost financial statements is £1,500 (£9,000 – £7,500). Stating this at average values for the year gives:

$$£1,500 \times \frac{150}{200} = £2,250$$

The monetary working capital at 31 December 20X5 in the historical cost financial statements is £1,000 (£12,000 – £11,000). Stating this at average values for the year gives:

$$£1,000 \times \frac{150}{200} = £750$$

The historical cost financial statements show a decrease in monetary working capital over the year of £500. However, at average values for the year, the monetary working capital is reduced by £1,500 (£2,250 – £750).

### Activity 30.3

What does the difference between the change under the historical cost convention and under the current cost convention of £1,000 (£1,500 – £500) – the monetary working capital adjustment – represent?

Now, let's do the same thing for Hillcrest Ltd. The monetary working capital adjustment is calculated as follows:

	20X5 £	20X4 £
Trade debtors	180,000	110,000
Trade creditors	( 90,000)	(100,000)
Net monetary working capital	<u>90,000</u>	<u>10,000</u>

Hence, the increase in monetary working capital in historical cost terms is £80,000 (£90,000 – £10,000).

Restating opening monetary working capital at average prices gives (to the nearest £000):

$$£10,000 \times \frac{155}{110} = £14,000$$

The value of closing monetary working capital at average prices is (to the nearest £000):

$$£90,000 \times \frac{155}{200} = £70,000$$

The increase in monetary working capital which is due to change in volume is £56,000 (£70,000 – £14,000). The increase due to price changes – the monetary working capital adjustment – is £24,000 (£80,000 – £56,000).

## 30.8 Current cost operating profit

Hillcrest Ltd's current cost operating profit, having applied the above adjustments, is given in Exhibit 30.4.

**Exhibit 30.4**

Hillcrest Ltd	
Current Cost Operating Profit for year ending 30 June 20X5 (£000)	
Sales	<u>1,700</u>
Net profit	80
Add Interest	<u>31</u>
	111
<i>Adjustments</i>	
Cost of sales adjustment	22
Monetary working capital adjustment	24
Additional depreciation adjustment	<u>30</u>
	( 76)
Current cost operating profit	<u>35</u>

From the point of view of a business and maintenance of its operating capacity, the current cost operating profit is relevant. However, maintenance of financial capital is also relevant where a business is not financed solely by equity. In this case, account should be taken of the capital structure of the business.

### 30.9 Gearing adjustment

If a company is financed by debt, and prices increase, whilst the monetary value of the loan has not changed, the market value has reduced. This gain for shareholders is recorded by making a gearing adjustment. The gearing adjustment is calculated in the following way.

**Firstly, a gearing proportion is calculated.** This is:

Average net borrowings for the year (L) : Shareholders' interest (S) + L

For Hillcrest Ltd, its net borrowings for the two years to 30 June 20X5 are:

	20X5	20X4
	£	£
Loan stock	310,000	310,000
Cash	(105,000)	( 75,000)
Net borrowing	<u>205,000</u>	<u>235,000</u>

Hence, average net borrowings for the year to 30 June 20X5 are:

$$\frac{£205,000 + £235,000}{2} = £220,000$$

Shareholders' interest for both years are:

	20X5	20X4
	£	£
Ordinary shares	200,000	200,000
Reserves	<u>415,000</u>	<u>335,000</u>
	<u>615,000</u>	<u>535,000</u>

Average shareholders' interest (S) for the year to 30 June 20X5 is:

$$\frac{£615,000 + £535,000}{2} = £575,000$$

The gearing proportion is:

$$\frac{L}{L + S} = \frac{£220,000}{£220,000 + £575,000} = 27.67\%$$

To calculate the gearing adjustment, this proportion is applied to the sum of the current cost adjustments for the year, that is:

	£
Cost of sales adjustment	23,000
Depreciation adjustment	30,000
Monetary working capital adjustment	<u>24,000</u>
	<u>77,000</u>

The gearing adjustment for Hillcrest Ltd (to the nearest £000) is:

$$27.67\% \times £77,000 = £21,000$$

Exhibit 30.5 shows the current cost reserve having made the above adjustments.

### Exhibit 30.5

	£000
Current cost reserve	180
Surplus on revaluation of plant and machinery	30
Additional depreciation adjustment	16
Surplus on revaluation of stock	22
Cost of sales adjustment	24
Monetary working capital adjustment	( 21)
Gearing adjustment	<u>251</u>
Balance at 30 June 20X5	

The current cost profit for the year to 30 June 20X5 is given in Exhibit 30.6.

### Exhibit 30.6

Hillcrest Ltd Current Cost Profit and Loss Account for year ending 30 June 20X5		
		£000
Sales		<u>1,700</u>
Trading profit (after adding back interest)		111
Adjustments		
Cost of sales adjustment	22	
Monetary working capital adjustment	24	
Additional depreciation adjustment	<u>30</u>	
		( 76)
Current cost operating profit		35
Gearing adjustment	21	
Less Interest payable	<u>(31)</u>	
		(10)
Current cost profit		<u>25</u>

The balance sheet for Hillcrest Ltd for 30 June 20X5, based on current costs, is given in Exhibit 30.7.

### Exhibit 30.7

#### Hillcrest Ltd Current Cost Balance Sheet as at 30 June 20X5

	£000
<i>Plant and machinery</i>	
Cost	1,100
Depreciation	( 440)
Net book value	<u>660</u>
<i>Current assets</i>	
Stock	266
Debtors	180
Cash	<u>105</u>
	551
<i>Current liabilities</i>	
Trade creditors	( 90)
<i>Net current assets</i>	<u>461</u>
	1,121
10% loan stock	( 310)
	<u>811</u>
<i>Financed by:</i>	
Ordinary shares	200
Reserves (335 + 25)	360
Current cost reserve	<u>251</u>
	<u>811</u>

### Learning outcomes

You should now have learnt:

- 1 During inflationary periods, one of the main criticisms of historical cost accounting is its inability to reflect changing prices.
- 2 Deprival value is a suitable valuation basis for accounting purposes.
- 3 One of the major difficulties with current cost accounting is the level of subjectivity which can be involved in converting historical costs to current costs.
- 4 Relevant price indices, specific to an asset or class of assets, can approximate replacement cost.
- 5 The purpose of the cost of sales adjustment is to restate historical cost of sales in current cost terms by including opening and closing stock at average prices.
- 6 The depreciation adjustment ensures that the depreciation charge in the current cost profit and loss account is based on the current value of the asset as stated in the current cost balance sheet.
- 7 The monetary working capital adjustment reflects the change in the market value of monetary assets and liabilities, usually trade debtors and trade creditors, in the current cost accounts.



- **8** Gains or losses for shareholders, which arise due to debt financing in times of changing prices, are accounted for in the gearing adjustment.
- 9** Surpluses and deficits on revaluations are credited or charged to the current cost reserve, which is a non-distributable reserve.

## Answers to activities

- 30.1** Substituting the £1,100 it would cost to replace the stock in place of the £1,000 the stock cost would produce a profit of £100. This is an example of the concept of 'maintenance of specific purchasing power' you learnt about in Section 29.5.
- 30.2** The main disadvantage of historical cost accounting, particularly in times of changing prices, is its relevance to decision making. This was demonstrated in the widget example in the previous section, when any business that relied purely on the historical cost-based profit calculation to determine how much profit was available for distribution could find it impossible to replace all the stock it had sold.
- 30.3** The change in working capital due to price changes during the year.

## Review questions

**30.1** State whether you consider the following statements to be true or false:

- (a) During inflationary periods, historical cost financial statements do not reflect a true and fair view.
- (b) The preparation of historical cost financial statements does not involve subjectivity.
- (c) Current cost accounting involves estimating future events.
- (d) An index number must relate to a specific asset in order to be useful in converting historical cost accounts to current cost accounts.
- (e) Where no market exists for an asset, conversion from historical cost to current cost can be difficult.

**30.2A** State whether you consider the following statements to be true or false:

- (a) The current cost of plant and machinery is likely to be its net realisable value.
- (b) A company should distribute dividends from the current cost reserve.
- (c) The market value of a monetary asset, for example trade debtors, will decrease during inflationary periods.
- (d) A gearing adjustment is necessary where a company is financed solely by equity capital.
- (e) Backlog depreciation is charged to the current cost reserve.

**30.3A** What are the practical difficulties a company may encounter in ascertaining the current values of its assets?

**30.4** Plant and machinery was purchased on 1 January 20X3 for £30,000, when the relevant specific price index was 90. What is the current cost value of the asset at 31 December 20X4 if the index at that date is 120?

**30.5A** The plant and machinery, details of which are given in question 30.4, is depreciated on a straight line basis at 10 per cent per annum. The depreciation charge is based on year end values. What is the current cost depreciation charge for the year ended 31 December 20X5, if the index at that date is 160?

**30.6** Calculate backlog depreciation at 31 December 20X5 for the plant and machinery whose details are given in question 30.5A.

**30.7A** A firm purchased machinery on 1 January 20X4 for £40,000, at which date the relevant price index for machinery was 100. Depreciation is charged on a straight line basis at 25 per cent per annum. The index at 31 December 20X4 had moved to 150, and at 31 December 20X5 it was 200. Show the current cost balance sheet entries for machinery at 31 December 20X4 and 31 December 20X5. Calculate the adjustments to the current cost reserve in respect of machinery.

**30.8** The historical cost of sales figure for Apple Ltd for the year ended 31 December 20X3 is calculated as follows:

	£
Opening stock	50,000
Purchases	<u>450,000</u>
	500,000
Closing stock	( <u>70,000</u> )
Cost of sales	<u>430,000</u>

Price indices for stock are as follows:

Index at date of purchase of opening stock	80
Index at date of purchase of closing stock	120
Average index for 20X3	100
Index at 31 December 20X3	130

**Required:**

Assuming that purchases occur evenly throughout the year, calculate the cost of sales adjustment for Apple Ltd for 20X3.

**30.9A** The balance sheet of Seafeld Ltd at 31 December 20X4 shows the following balances:

	31 December 20X4	31 December 20X3
	£	£
Trade debtors	35,000	30,000
Trade creditors	25,000	23,000

The relevant price indices for trade debtors and trade creditors are:

31 December 20X3	120
31 December 20X4	180
Average for the year ending 31 December 20X4	150

**Required:**

Using the above information, calculate the monetary working capital adjustment at 31 December 20X4 for Seafeld Ltd.

**30.10** If the relevant price indices for trade debtors and trade creditors are as follows, calculate the monetary working capital adjustment for Seafeld Ltd, using the details given in question 30.9A.

31 December 20X3	200
31 December 20X4	280
Average for the year ending 31 December 20X4	240

**30.11A** The information given below has been extracted from the accounting records of Cedarwood Ltd for the year ended 30 June 20X4. Prepare a statement showing the current cost operating profit to 30 June 20X4.



	£
Sales	2,500,000
Historical cost operating profit	1,400,000
<i>Current cost adjustments</i>	
Additional depreciation adjustment	500,000
Cost of sales adjustment	750,000
Monetary working capital adjustment	25,000

**30.12** The balance sheet for Cremore Ltd at 31 December 20X3 is given below (£000):

	20X3	20X2
<i>Plant and machinery</i>		
Cost	800	800
Depreciation	(320)	(160)
	480	640
<i>Current assets</i>		
Stock	210	130
Debtors	100	60
Cash	145	50
	455	240
<i>Current liabilities</i>		
Trade creditors	( 80)	( 60)
<i>Net current assets</i>	375	180
10% loan stock	(200)	(200)
	655	620
<i>Financed by:</i>		
Ordinary shares	250	250
Reserves	370	340
Current cost reserve	35	30
	655	620

**Required:**

Using the above information, calculate the gearing adjustment percentage:

$$\frac{L}{L + S}$$

**30.13A** The following information has been extracted from the accounting records of Sycamore Ltd for the year ended 30 June 20X3.

	£
Sales	9,000,000
Historical cost trading profit	4,000,000
Interest payable	500,000
Corporation tax charge for the year	1,500,000
Ordinary dividend	600,000
Additional depreciation adjustment	200,000
Cost of sales adjustment	800,000
Monetary working capital adjustment	370,000
Gearing adjustment: $\frac{L}{L + S}$	20%

**Required:**

Prepare a current cost profit and loss account for Sycamore Ltd for the year ended 30 June 20X3.

**30.14** During a period of inflation, many accountants believe that financial reports prepared under the historical cost convention are subject to the following major limitations:

- 1 stocks are undervalued;
- 2 depreciation is understated;
- 3 gains and losses on net monetary assets are undisclosed;
- 4 balance sheet values are unrealistic; and
- 5 meaningful periodic comparisons are difficult to make.

**Required:**

Explain briefly the limitations of historical cost accounting in periods of inflation with reference to each of the items listed above.

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**30.15A** You are presented with the following information relating to Messiter plc:

Year to 31 December	20X4 £m	20X5 £m
<b>Profit and loss accounts:</b>		
Turnover, all on credit terms	1,300	1,400
Cost of sales	<u>650</u>	<u>770</u>
Gross profit	<u>650</u>	<u>630</u>
Profit before taxation	<u>115</u>	<u>130</u>
<b>Balance sheets at 31 December:</b>		
Fixed assets at cost	850	850
Less Accumulated depreciation	<u>510</u>	<u>595</u>
Net book value	<u>340</u>	<u>255</u>
Stock at cost	<u>105</u>	<u>135</u>
Trade debtors	<u>142</u>	<u>190</u>

**Required:**

- (a) Using the historical cost financial statements and stating the formulae you use, calculate the following accounting ratios for both 20X4 and 20X5:
  - (i) Gross profit percentage;
  - (ii) Net profit percentage;
  - (iii) Stock turnover, stated in days;
  - (iv) Trade debtor collection period, stated in days; and
  - (v) Fixed asset turnover.
- (b) Using the following additional information:
  - (i) Restate the turnover for 20X4 and 20X5 incorporating the following average retail price indices:

Year to 31.12.20X4	85
Year to 31.12.20X5	111

- (ii) Calculate the additional depreciation charge required to finance the replacement of fixed assets at their replacement cost. The company's depreciation policy is to provide 10 per cent per annum on original cost, assuming no residual value.

The replacement cost of fixed assets at 31 December was as follows:

	£ millions
20X4	1,140
20X5	1,200

- (iii) Based upon these two inflation adjustments, why may it be misleading to compare a company's results for one year with that of another without adjusting for changes in general (RPI) or specific inflation?

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# Social accounting

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the term 'social accounting'
- describe the implications of social accounting for the accounting function
- describe some of the difficulties in the measurement of qualitative factors
- describe the conflict between shareholders' interests and social considerations

## Introduction

In this chapter you'll learn about some of the issues underlying the development of social accounting, of five general areas to which social accounting has been applied, and of the extent to which social accounting is becoming part of company reporting.

### 31.1 Background

Over time, the objective of financial statements has changed. In addition to reporting to shareholders of the company, directors are aware of a wide range of other user groups who are interested in accounting information. These user groups include employees of the company and, more controversially, the public at large. The controversy arises when considering whether or not organisations are responsible for 'social actions', that is actions which do not have purely financial implications.

### 31.2 Costs and measurement

One of the problems associated with actions of this type is the difficulty of identifying costs and measuring the effects of (often intangible) factors that contribute to the 'value' of an organisation. It is obvious that employee loyalty and commitment to quality performance increase this value, but how are such intangibles to be measured using objective and verifiable techniques?

#### Activity 31.1

How would you value employee loyalty?

Some of the input costs of 'social' activities can be evaluated reasonably accurately. Providing 'social' information required under the Companies Act 1985 is not particularly difficult – it

requires information regarding employees to be presented in the financial statements, including numbers of employees, wages and salaries data, and details regarding the company's policy on disabled persons. Also, even where 'social' actions are required by legislation, they can often be costed reasonably accurately. For example, there are a large number of European Union directives which have been implemented in the UK relating to social and environmental policies, including the monitoring and control of air and water pollution.

The costs of complying with these disclosure requirements and operational control measures can be high and, as the number of regulations increases, these costs will become a basic and essential part of financial statements. It will become increasingly important that not only the costs are reported, but also the benefits, and this is where the difficulties arise – how can the benefits of controlling pollution from a factory be evaluated? Indeed, should an attempt be made to evaluate them at all? Would they be better reported in qualitative or non-financial quantitative terms?

As soon as a company seeks to incorporate social criteria alongside other, more traditional performance measures, problems of objectivity, comparability and usefulness arise. For example, social criteria for a paper manufacturer may include environmental issues concerning reforestation; and an oil extraction company would include the environmentally safe disposal of oil rigs at the end of their useful economic lives among its social criteria.

However, issues of this type become problematical when viewed using conventional capital appraisal techniques. Not only may the measurable financial payback be so long as to be immaterial – as in the case of an environmental project such as reforestation – it may be virtually non-existent, as in the case of the disposal of obsolete oil rigs. Assessment of issues of this type require different techniques from those traditionally used, and organisations' accounting information systems will need to take this into account, not just in terms of using more qualitative value criteria, but also in selecting the information which is sought in order to assist in the decision-making process.

### 31.3 The pressure for social actions and social accounting

Despite the existence of many environmental laws, much of the pressure for social actions comes from pressure groups like Greenpeace. These groups can have an enormous impact upon an organisation's profitability, in ways that governments have singularly failed to do. For example, an air pollution law may concentrate on monitoring the quality of air around a factory, rather than on measuring emissions from the factory, making it far more difficult to enforce action against the factory, as it can always argue that another factory is the cause of any pollution found. Also, powerful cartels can influence legislation to create enormous delays in introducing socially responsible legislative controls. On the other hand, a pressure group can stop demand for a company's products, make it difficult for it to send its products to its customers, and may give it so much negative publicity that it can find its public image materially and irreversibly altered in a very short time.

While pressure groups are not a new phenomenon, their power is now far greater than it has ever been. Organisations need to be aware of the social, particularly the environmental, issues inherent in and/or related to their activities, and must be in a position to assess how best to approach these issues. They can only do so if they identify all the variables, both quantitative and qualitative, and both the inputs (costs) and the outputs (effects) of these variables, and determine methods with which to determine what actions to take.

Social accounting is concerned with how to report upon the application of the social policies adopted by an organisation, and upon how they have impacted upon the organisation and its environment. An organisation that does so effectively will not only be providing user groups with rich information from which to form a view concerning its social ethos, it will also be enhancing its ability to take decisions appropriate for its own longer-term survival and prosperity.

## 31.4 Corporate social reporting

The reporting of the social effects of a company's activities became an issue in the UK in the 1970s. The reporting of non-financial information usually takes the form of narrative disclosure, sometimes supported by a statistical summary. As much social reporting is non-mandatory, comparison with other companies is difficult, if not pointless and misleading. This is partially due to a positive bias in what is reported – most companies tend to report only 'good news' in their social reports. It is also due to the lack of standards governing what to include and how to present social reports.

Environmental issues have been firmly on the political agenda since the early 1980s and large corporations have responded to public demands for more information about 'green issues'. Oil companies, in particular, produce a notable amount of additional information in their annual reports. This environmental information usually includes details about the company's waste disposal practices, attitudes towards pollution and natural resource depletion, as well as the overall corporate environmental policy. However, many continue to avoid any non-mandatory social reporting, and many instances have been reported of organisations claiming to be socially responsible, when they were, in fact, anything but.

## 31.5 Types of social accounting

Social accounting can be divided into five general areas:

- (a) national social income accounting;
- (b) social auditing;
- (c) financial social accounting in profit-oriented organisations;
- (d) managerial social accounting in profit-oriented organisations;
- (e) financial and/or managerial social accounting for non-profit organisations.

## 31.6 National social income accounting

National social income accounts have now been in existence for many years. The measure of the nation's productivity recorded in the accounts – basically in sales terms – gives an income called the gross national product, usually referred to as GNP.

To an outsider, an increase in GNP would seem to indicate a betterment or progress in the state of affairs existing in the country. This is not necessarily so. The following example illustrates this point.

A new chemical factory is built in a town. Fumes are emitted during production which cause houses in the surrounding areas to suffer destruction of paintwork and rotting woodwork, and it also causes extensive corrosion of bodywork on motor vehicles in the neighbourhood. In addition it also affects the health of the people living nearby. An increase in GNP results because the profit elements in the above add to GNP. These profit elements include:

- to construction companies and suppliers of building materials: profit made on construction of plant
- to house paint dealers and paint manufacturers, painters and decorators, joiners and carpenters: profit made on all work effected in extra painting, woodwork, etc.
- to garages and car paint manufacturers: profit made on all extra work needed on motor vehicles
- to chemists and medical requirement manufacturers: profit made on dealing with effects on residents' health, because of extra medical purchases, etc.

However, in real terms one can hardly say that there has been progress. Obviously the quality of life has been seriously undermined for many people.

As national income accounts do not record the 'social' well-being of a country, other national measures have been proposed. The one most often mentioned is a system of 'social indicators'. These measure social progress in such ways as:

- national life expectancies
- living conditions
- levels of disease
- nutritional levels
- amount of crime
- road deaths.

Thus if national life expectancies rose, or road deaths per 100,000 people decreased, etc. there could be said to be social progress, while the converse would apply were the opposite signals found to be occurring.

The main difficulty with this approach is that (given present knowledge and techniques) it cannot be measured in monetary terms. Because of this, the national social income accounts cannot be adjusted to take account of social indicators. On the level of an individual organisation, however, social indicators similar to the above are used in planning, programming, budgeting systems (PPBS). This will be discussed later.

### 31.7 Social auditing

While national social accounting would measure national social progress, many individuals and organisations are interested in their own social progress. This form of social progress is usually called 'social responsibility'.

To identify activities to be measured, a 'social audit' is required, investigating:

- (a) which of their activities contribute to, or detract from, being socially responsible;
- (b) measurement of those activities;
- (c) a report on the results disclosed by the investigation.

An example of this might be to discover how the organisation had performed in respect of such matters as:

- employment of women
- employment of disabled people
- occupational safety
- occupational health
- benefits at pensionable age
- air pollution
- water pollution
- charitable activities
- help to developing countries.

Social audits may be carried out by an organisation's own staff or by external auditors. The reports may be for internal use only or for general publication.

### 31.8 Financial social accounting in profit-oriented organisations

Financial social accounting is an extension to normal financial accounting. The objective may either be to show how the social actions have affected financial performance, or otherwise to put

a social value on the financial statements of the organisations. The two main types of financial social accounting envisaged to date are those of human resource accounting and how the organisation has responded to governmental or professional bodies' regulations concerning environmental matters.

### Human resource accounting

One of the main limitations of 'normal' financial accounting is the lack of any inclusion of the 'value' of the workforce to an organisation. The value may be determined by:

- (a) capitalising recruitment and training costs of employees and apportioning value over employees' period of employment; or
- (b) calculating the 'replacement cost' of the workforce and taking this as the value of human resources; or
- (c) extending either of the above to include the organisation's suppliers and customers.

It is contended that such measurements have the benefits that (1) financial statements are more complete, and (2) managerial decisions can be made with a fuller understanding of their implications.

For instance, suppose that a short-term drop in demand for a firm's goods led to a manufacturer laying off part of the workforce. This might mean higher profits in the short term, because of wages and salaries saved. In the long term, it could do irreparable damage, as recruitment could then be made difficult, or because of the effect on the morale of the rest of the workforce, or changes in attitudes of suppliers and customers.

### Compliance costs of statutory/professional requirements

As the effects of organisations upon societies are more widely recognised there will be more and more regulations with which to comply. The costs of compliance will obviously then become a basic and essential part of financial statements.

## 31.9 Managerial social accounting in profit-oriented organisations

All that has been described has an effect upon the information systems of an organisation. They will have to be established on an ongoing basis, rather than be based purely on adjustments such as those made to the financial accounts at the year end.

The information will be used to affect the day-to-day decisions needed to run the organisation.

#### Activity 31.2

Why is an ongoing information system required in order to do this?

## 31.10 Financial and/or managerial social accounting for non-profit organisations

As profit is not a measure in these organisations it can be difficult to measure how well they are performing. Two approaches to measurement have been used, **planning, programming, budgeting systems (PPBS)** and **social programme measurement**.

Both of these approaches can be said to be part of what politicians in recent years have called 'value for money'. The general attitude is that while there may be a need for all sorts of social

programmes, including health, there is a great need for ensuring that money is not wasted in doing this. The demand is that we should ensure that we get 'value for money' in that the outputs from such schemes should be worth the amount of money expended in carrying them out.

### Planning, programming, budgeting systems (PPBS)

It has been said that in the past there was a great deal of confusion between planning and budgeting. Annual budgeting takes a short-term financial view. Planning, on the other hand, should be long term and also be concerned with strategic thinking.

PPBS enables management of non-profit organisations to make decisions on a better informed basis about the allocation of resources to achieve their overall objectives. PPBS works in four stages:

- 1 Review organisational objectives.
- 2 Identify programmes to achieve objectives.
- 3 Identify and evaluate alternative ways of achieving each specific programme.
- 4 On the basis of cost/benefit principles, select appropriate programme.

PPBS necessitates the drawing up of a long-term corporate plan. This shows the objectives which the organisation is aiming to achieve. Such objectives may not be in accord with the existing organisational structure.

For instance, suppose that the objective of a local government authority, such as a city, is the care of the elderly. This could include providing:

- services to help them keep fit
- medical services when they are ill
- old people's housing
- sheltered accommodation
- recreational facilities
- educational facilities.

These services will usually be provided by separate departments, e.g. housing, welfare, education. PPBS relates the total costs to the care of the elderly, rather than to individual departmental budgets.

Management is therefore forced by PPBS to identify exactly which services or activities should be provided, otherwise the worthiness of the programme could not be evaluated. PPBS also provides information which enables management to assess the effectiveness of their plans, such as giving them a base to decide whether, for every thousand pounds, they are giving as good a service as possible.

As the structure of the programme will not match up with the structure of the organisation, e.g. the services provided will cut across departmental borders, a specific individual must be made responsible for controlling and supervising the programme.

### Social programme measurement

The idea that governmental social programmes should be measured effectively is, as yet, in its infancy.

A government auditor would determine whether the agency had complied with the relevant laws, and had exercised adequate cost controls. The auditor would determine whether or not the results expected were being achieved and whether there were alternatives to the programmes at a lower cost.

There should be cost/benefit analyses to show that the benefits are worth the costs they incur. However, the benefit side of the analysis is often very difficult to measure. How, for instance, do you measure the benefits of not dumping a particular substance or an obsolete oil rig into the sea?

As a consequence, most social programmes do not measure results (benefits). Instead they measure 'outputs', e.g. how many prosecutions for dumping waste: a high number of prosecutions is 'good', a low number 'bad'. This is hardly a rational way of assessing results, and quite a lot of research is going into better methods of audit.

### 31.11 Conflict between shareholders' interests and social considerations

Obviously, an organisation has to come to a compromise about how far it should look after the interests of its shareholders and how far it should bother about social considerations. For instance, a company could treat its employees so well in terms of pay, pensions and welfare that the extra costs would mean very low profits or even losses.

On the other hand there must be instances where, no matter what the effects on profits, the expenses just have to be incurred. If the company has a chemical plant which could easily explode, causing widespread destruction and danger to people, then there cannot be any justification for not spending the money either to keep the plant safe or to demolish it. The full severity of the law must bear down on transgressors of the law in such cases of wilful neglect.

All the facts of the particular case must be brought into account. Let us look at a typical case where the answer may seem obvious, but perhaps there may be other factors which may make the answer not so obvious. Workers in underdeveloped countries are usually paid far lower wages than those in the developed countries. What happens if a large multinational company pays its workers in a given country three or four times as much as home-based companies? Immediately everyone wants to work for the multinational company, which can afford high wages, and leave the home-based companies which cannot. Is that sensible? What chance is there for the development of the country's own home-based industries if the outside companies constantly take all the best brains and most able people?

In such a case it would probably make more sense for the multinational company to pay wages more in keeping with the particular economy, and to help that country in other ways such as by improving the health care generally for all, better education for all, and so on. Obviously a topic such as this will engender discussions and arguments for some considerable time.

### 31.12 Reports from companies

Companies, mainly those based in the USA, have begun to declare their philosophy towards such matters as the environment. This is usually included in the annual reports which accompany their financial statements.

For example, a company may have decided to have the following ten principles of environmental policy:

- 1 To comply with both governmental and community standards of environmental excellence.
- 2 To use only materials and packaging selected to be good for the health of consumers, and for the safety and quality of the environment.
- 3 To keep energy use per unit of output down to a low level.
- 4 To minimise waste.
- 5 To get to as low a level as possible the discharge of pollutants.
- 6 To use other firms which have shown commitment to environmental excellence.
- 7 To research fully the ecological effect of the company's products and packaging.
- 8 To carry on business operations in an open, honest and co-operative manner.
- 9 To make certain that on the board of directors there would be scientifically knowledgeable directors, and ensure that they were regularly provided with environmental reports.

- 10 To ensure that all the above principles are fully observed and that challenges posed by the environment are vigorously and effectively pursued.

## Learning outcomes

### You should now have learnt:

- 1 To whom organisations are responsible is a controversial area, and there is no exact definition of 'social accounting'.
- 2 That social indicators measure social progress, but as yet, given their inability to measure progress in monetary terms, they cannot be incorporated into social income accounts.
- 3 That a social audit will test the social responsibility of an organisation, including compliance with regulations, for example legislation relating to employees.
- 4 If an organisation wishes to take account of social and environmental factors, these items need to be incorporated into its accounting information system.
- 5 That there is a conflict between shareholders' interests, for example profit maximisation, and social considerations.
- 6 That corporate social reporting is the reporting of a company's activities and how they are related to social, including environmental, issues.
- 7 That there are five areas into which social accounting can be divided:
  - (a) national social income accounting;
  - (b) social auditing;
  - (c) financial social accounting in profit-oriented organisations;
  - (d) managerial social accounting in profit-oriented organisations;
  - (e) financial and/or managerial social accounting for non-profit organisations.
- 8 That social accounting is as yet in its infancy. There is obviously a great difficulty in trying to put money values on the various aspects of being better off or worse off. There are also problems connected with exactly what 'better off' and 'worse off' mean. One person's worsening in some way may be someone else's betterment.

## Answers to activities

- 31.1** There isn't a correct answer to this question but there are examples of values being placed on employee loyalty, for example, clocks for 25 years' service, gold watches for 50 years' service, etc. But, do acts like this actually place a value on employee loyalty? Hardly – what is the cost per year of a clock costing £25 that is presented to an employee for 25 years' loyal service to the organisation: £1 per year. Professional footballers who stay longer than the norm with one club are entitled to a testimonial match where all the proceeds are given to the loyal player. Similar schemes also exist in cricket though, in cricket, it is usually a 'benefit year' where lots of events are held for the benefit of an individual player. Yet, there have been cases where footballers have ended up out-of-pocket because the gifts they gave all the players who took part in the testimonial match (they don't get paid) and other expenses were greater than the income from the game – hardly a case of loyalty being rewarded.

Clearly, organisations don't tend to put a value on loyalty in such a way as to directly reward the loyal individual. They also cannot include a figure for employee loyalty in the balance sheet as an asset. However, when a business is sold, employee loyalty is one of the factors that will be taken into account when deciding what the business is worth.



Just about the only way a business can recognise loyalty and endeavour to give it a value is to publicise it. This can be done through the media (tv, radio, newspapers, internet, etc). It can also be done in the annual report, the document containing all the financial statements and accompanying reports that is sent to shareholders each year. The share price may rise slightly as a result but, even if it does, it is hardly the same as the company placing a value of the loyalty of its employees.

- 31.2** Being socially aware means that you monitor constantly the extent to which you are achieving your social-related goals. You can't simply check once a year whether you are putting too much pollution in the local river or whether your employees are being loyal and are happy, or whether your supplies are coming from companies that do not employ child labour. If an organisation becomes socially aware and adopts social accounting, its information system needs to be amended to reflect the change. It is not necessarily the case that its accounting information system will be affected – that depends upon whether the company's social policies are to be reported by the company along with its financial information.

## Review questions

**31.1** Describe how an increase in gross national product may not have a positive effect on the well-being of the country.

**31.2** What types of measure could be used to measure social well-being? What difficulties would be discovered in trying to use accounting in measuring these?

**31.3** What aspects of an organisation's activities could be measured in a social audit?

**31.4** Describe how there could be conflicts between short-term and long-term benefits.

**31.5** Describe how PPBS may conflict with departmental budgets.

**31.6A** Review a set of company financial statements for social disclosures. Consider the usefulness of such disclosures to different user groups.

**31.7** Why has the traditional model of income measurement failed to account for the impact of business activities on the environment?

*(Association of Chartered Certified Accountants)*

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Corporate governance

## Learning objectives

After you have studied this chapter, you should be able to:

- explain why it is important for companies to adopt sound practices of corporate governance
- describe the background to the development of the *Combined Code on Corporate Governance*
- outline the nature of the contents of the *Combined Code on Corporate Governance*

## Introduction

In this chapter, you'll learn about the increasingly important issue of **corporate governance**, of the background to the development of a code on corporate governance that UK listed companies must follow and on which they must report their compliance annually and of the nature of its contents.

### 32.1 The importance of corporate governance

Corporate governance has been defined as 'the exercise of power over and responsibility for corporate entities'. It is concerned with the manner in which directors carry out their stewardship responsibilities. If the directors of a company are failing to act in the interests of the shareholders, they are not performing the role to which they were appointed. Where this occurs, the shareholders need to be aware of it and take the steps necessary to ensure the directors do perform their role properly.

However, it is all very well saying this should happen. In the absence of any regulation that must be adhered to, it can take a long time for it to become clear to a company's shareholders that the directors are acting inappropriately. To this end, a set of guidelines has been developed over the last decade – the *Combined Code on Corporate Governance*.

More information on why corporate governance is important can be found in a briefing paper prepared by the ICAEW: *Briefing 03.02 Corporate governance: why should companies care?* It is available at [http://www.icaew.co.uk/viewer/index.cfm?AUB=TB2I\\_31780](http://www.icaew.co.uk/viewer/index.cfm?AUB=TB2I_31780).

### 32.2 The *Combined Code*

In 2003, in response to continuing public concerns about the actions and motivation of some company directors who appeared to have their own interests at heart, rather than those of the

shareholders they were appointed to represent, a revised version of a document called the *Combined Code on Corporate Governance* was published by the Financial Reporting Council.

The *Combined Code* contains a set of guidelines which can be used to determine whether directors have adequately performed their primary task of corporate stewardship. That is, whether the directors have carried out their duties adequately and in an appropriate manner, and in the best interests of the shareholders that they represent.

### 32.3 The policing of effective corporate governance

The *Combined Code* is a voluntary *code of conduct* for the directors of all UK limited companies. It is neither a legally enforceable code nor has it the status of an accounting standard. However, compliance with the *Combined Code* is required by the listing rules of the Stock Exchange. As a result, when a company is listed on a UK Stock Exchange, the Directors' Report (which is included in the annual report of all UK companies) must include a statement indicating the extent to which requirements of the *Combined Code* have been observed. Along with the financial statements and notes, the Directors' Report is subject to review by a company's external auditors, thus minimising the possibility of spurious claims being made by the directors.

#### Activity 32.1

If corporate governance is so important, why do you think unlisted companies are not required to apply the *Combined Code*?

### 32.4 The development of the *Combined Code*

The development of the *Combined Code* began with the *Cadbury Report*. This was the report of a Committee set up in May 1991 by the Financial Reporting Council, the London Stock Exchange and the accountancy profession, under the chairmanship of Sir Adrian Cadbury, to consider the financial aspects of corporate governance. The *Cadbury Report* was published in December 1992.

Its main recommendation was that the boards of all the listed companies registered in the UK should comply with a code of practice and state in their financial accounts whether or not they have complied with it, identifying any areas of non-compliance. It also stated that non-executive directors should be appointed for specified terms and re-appointment should not be automatic, that such directors should be selected through a formal process and that both their selection and their appointment should be a matter for the board as a whole.

This was followed by the establishment of a committee chaired by Sir Richard Greenbury. The committee's main remit was to look into various aspects of directors' remuneration. The *Greenbury Report* was published in July 1995 and it recommended a Code of Best Practice based on the fundamental principles of accountability, transparency, and linkage of rewards to performance.

The *Cadbury Report* and the *Greenbury Report* were then reviewed together and the report on this review, *The Committee on Corporate Governance – Final Report* (often referred to as the *Hampel Report*) was published in January 1998. This report led to the first version of the *Combined Code* being published in June 1998.

Using that version as a starting point, the current version of the *Combined Code* was developed with reference to the *Turnbull Report on Internal Control* (2002–03), the *Smith Guidance on Audit Committees* (2003) and the *Higgs Report on Reviewing the Role and Effectiveness of non-Executive Directors* (2003) and contains elements of all three reports within it.

### 32.5 Justification for a *Combined Code*

Following the issue of the latest version of the *Combined Code* in 2003, the need for a such a code was confirmed in a report called *Enterprise Governance: Getting the Balance Right*, prepared by the Professional Accountants in Business Committee of the International Federation of Accountants (IFAC) and was published by IFAC in 2004. It looked at 27 corporate case studies – 11 outstandingly successful companies and 16 companies that had failed. It found evidence of clear failures in corporate governance in the recent well known cases, including Enron, Worldcom and Vivendi. The report can be found at the IFAC website [www.ifac.org](http://www.ifac.org) or at the websites of accountancy bodies, such as CIMA, where it is at [www.cimaglobal.com/downloads/enterprise\\_governance.pdf](http://www.cimaglobal.com/downloads/enterprise_governance.pdf).

The study analysed information for each company including:

- whether the role of the chairman and chief executive was split
- how long the chairman, chief executive and financial director had been in place and where they had been recruited from
- the executive remuneration package
- the composition and background of the board
- information about mergers and acquisitions
- strategy development and implementation
- the use of complex financial engineering techniques.

#### Corporate governance – key failure factors

High on the list of the key failure factors identified by the study was the culture and tone at the top level of the company. By their own poor example and failure to uphold high ethical standards, senior managers allowed a culture to flourish in which secrecy, rule-breaking and fraudulent behaviour became acceptable. Many examples were found of dominant, charismatic chief executives who went unchallenged by senior executives and board directors.

The study found that strategic factors were more important than good corporate governance. This confirmed what many commentators and business analysts had always felt to be the case – while poor corporate governance can ruin a company, good corporate governance cannot, on its own, ensure success.

### 32.6 The content of the *Combined Code*

The *Combined Code* comprises of two sections and three schedules:

Section 1: Companies

- A: Directors
- B: Remuneration
- C: Accountability and Audit
- D: Relations with Shareholders

Section 2: Institutional Shareholders

- E: Institutional Shareholders

Schedule A: Provisions on the design of performance related remuneration

Schedule B: Guidance on liability of non-executive directors: care, skill and diligence

Schedule C: Disclosure of corporate governance arrangements

It contains a set of main and supporting principles and all listed companies have to report on how it applies them. The form and content of this report are not prescribed, it being felt that companies should be free to explain their governance policies in the light of the principles, including any special circumstances which have led to a particular approach being adopted.

As you can see from the outline contents of the *Combined Code*, it also contains a set of provisions. Listed companies must either confirm they have complied with these provisions, or provide an explanation where they have not done so. However, companies outside the FTSE 350 (i.e. those companies that are not among the 350 largest companies) are exempt from some of the provisions.

Schedule C of the *Combined Code* contains guidance which suggests ways of applying the relevant principles and of complying with the relevant provisions on internal control (C.2 and part of C.3 in the Code); and on the provisions concerning audit committees and auditors (C.3 of the Code).

At times, the text of the *Combined Code* lacks the precision of, for instance, an accounting standard. For example, the main principle in Section 1 concerning directors states that ‘Every company should be headed by an effective board, which is collectively responsible for the success of the company.’ What precisely is meant by ‘effective’ is a matter of interpretation based on the detailed contents of the *Combined Code*.

The supporting principles concerning directors in Section 1 are similarly broadly presented:

‘The board’s role is to provide entrepreneurial leadership of the company within a framework of prudent and effective controls which enables risk to be assessed and managed. The board should set the company’s strategic aims, ensure that the necessary financial and human resources are in place for the company to meet its objectives and review management performance. The board should set the company’s values and standards and ensure that its obligations to its shareholders and others are understood and met’.

‘All directors must take decisions objectively in the interests of the company’.

‘As part of their role as members of a unitary board, non-executive directors should constructively challenge and help develop proposals on strategy. Non-executive directors should scrutinise the performance of management in meeting agreed goals and objectives and monitor the reporting of performance. They should satisfy themselves on the integrity of financial information and that financial controls and systems of risk management are robust and defensible. They are responsible for determining appropriate levels of remuneration of executive directors and have a prime role in appointing, and where necessary removing, executive directors, and in succession planning.’

While this may appear less likely to be effective than the heavily defined terminology of accounting standards, the nature of what is being dealt with in the *Combined Code* lends itself to this approach and there is no doubt that it is proving an effective instrument in improving corporate governance in the UK.

The full text of the *Combined Code* can be found at [www.fsa.gov.uk/pubs/ukla/lr\\_comcode2003.pdf](http://www.fsa.gov.uk/pubs/ukla/lr_comcode2003.pdf). It contains a list of related URLs which anyone wishing to look further into this topic would be well advised consulting.

## Learning outcomes

You should now have learnt:

- 1 Why it is important for companies to adopt sound practices of corporate governance.
- 2 About the background to the development of the *Combined Code on Corporate Governance*.
- 3 About the nature of the content of the *Combined Code on Corporate Governance*.

## Answer to activity

**32.1** The *Combined Code* has been imposed upon listed companies following high profile incidences of financial irregularities that resulted in heightened public concerns about financial reporting, accounting procedures and the remuneration of directors. Unlisted companies are, by definition, much smaller enterprises where, typically, the directors own the majority, if not all the shares of the company. Many of these companies are exempt from an annual audit and, in the case of those that are externally audited, the only people likely to be affected by poor corporate governance are those same people who are failing in the performance of their stewardship role. Consequently, it makes little sense to require unlisted companies to apply the *Combined Code*.

## Review questions

**32.1** Define corporate governance.

**32.2** If the *Combined Code* is a *voluntary* code of conduct for the directors of all UK limited companies, why is it that all listed UK companies must report annually on their compliance with it?

**32.3** Briefly describe the development of the *Combined Code* from 1991 to the present day.

**32.4** Briefly describe the main and supporting principles relating to directors contained in the *Combined Code*.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Public sector accounting

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the differences between the public sector and the private sector
- describe the accounting arrangements in place in central government, local government, and the National Health Service
- describe the structure of public sector auditing in the UK for central government, local government, and the National Health Service
- outline some key differences between the structure of public sector auditing in Scotland and that which exists in the rest of the UK

## Introduction

In this chapter, you'll learn about the special aspects of accounting in the **public sector**, particularly the accounting arrangements in place in central government, local government, and the national health service. You will also learn about auditing of the public sector and of the main differences between the structure of the audit system in Scotland compared to the rest of the UK.

### 33.1 The nature of the 'public sector'

The public sector has been defined as 'all organisations which are not privately owned or operated'. It consists of organisations the control of which is in the hands of 'public', as opposed to 'private' owners, and whose objectives involve the provision of services where profit is not a primary objective. The word 'public' as used in the phrase 'in the hands of the public' is often taken to mean 'government', either local or national.

Unlike the private sector of the economy, where there is a clear objective and motivation in making profits or a return on capital, the public sector has a multitude of demands and objectives.

*'In the private sector, you are able to focus very clearly on the bottom line. You've got a clear objective. That's not always true in the public sector. In the public sector, you often have many conflicting objectives and grappling with those is part of the skill of public sector management and part of what makes it so interesting.'* (Steve Bundred, Audit Commission Chief Executive, *Accountancy Age*, 2 September 2004, p 19.)

The public sector is concerned primarily with providing services to the general public which would not otherwise be available or provided adequately within the financial resources of all individual members of the public. Consequently, it exists primarily in order to:

- provide services which are beyond the private means of people using those services
- provide a benefit to everyone within socially acceptable norms
- achieve certain minimum standards of service, e.g. roads, education and training schemes
- substitute central or local planning in place of consumer choice
- ensure a consistent approach to certain practices or procedures
- aid control and economic regulation in key areas.

These objectives within the public sector are significantly influenced by the central government. The relationship between central control and local democracy is an important political consideration and, while the concept of what the public sector provides is fairly universal, the means of control over the different organisations providing these services can differ.

### 33.2 Types of public sector organisations in the UK

Public sector organisations can be classified into five major groups in the UK:

- Departments of central government
- Nationalised industries, public corporations
- Local authorities
- Health authorities
- Bodies set up for a specific purpose: universities; the Royal Mint; and HM Stationery Office.

### 33.3 The relevance of legislation

The nationalised industries and public corporations are required to meet certain criteria set by the government in the form of a return on capital. The other four category organisations are set other forms of performance targets. The obligation to provide public services by the different types of organisation is generally derived from statutes or legislation passed by Parliament. This legislation may be either 'general', i.e. applicable to the whole country, or 'local', relating to just one area.

For anyone looking at these organisations from an accounting perspective, a knowledge of certain aspects of this legislation is important. Not only will the relevant statutes set out the powers of the organisation for raising money to pay for the provision of services, associated regulations may provide details of the accounting and audit requirements relating to the organisation.

### 33.4 The objectives of public sector organisations

*'Many public bodies are effective monopolies, providing services to very vulnerable people or services that people can't choose to opt out of. So there's a necessity in the public sector to have other means to ensure effectiveness, stimulate innovation and drive improvement.'* (Steve Bundred, Audit Commission Chief Executive, *Accountancy Age*, 2 September 2004, p 19.)

Each type of public sector organisation has its own accounting objectives which influence the form and content of its financial statements and accounting arrangements. Some of the underlying factors necessary to achieve those objectives are common to all public sector organisations.

#### Stewardship

The use of public money, particularly if it is acquired through taxation, demands that the accounts show that monies have been properly and lawfully used. This requires the publication of sufficient information which can be easily understood by the public.



## Maintaining systematic records

All public sector organisations must maintain systematic records so that (i) financial requirements can be estimated and (ii) the measurement of the use of these financial resources can be established and the relative efficiency and effectiveness of the organisation in using them can be assessed. Value for money is of the utmost importance, especially when taxation or charging levels are high or increasing rapidly. Accounting procedures must be directed towards ensuring that the maximum benefit is obtained from the limited resources.

## Financial control

Total planned public expenditure in the year 2004–2005 was £488 billion, financed by receipts of £455 billion and borrowing of £33 billion. When amounts of this magnitude are involved, there is a significant need for effective financial control, particularly given the lack of any profit objective and the motivation and discipline that go with it. Even more than in the case of the private sector, financial control in the public sector must be exercised through a sound budgeting and accounting system. Such a control system will normally be supported by written internal regulations or instructions concerning expenditure and income procedures and their associated accounting arrangements and the control system used by one organisation is often virtually identical to those in other similar public sector organisations.

### Activity 33.1

Why do you think similar public sector organisations are likely to use virtually identical control systems?

In the rest of this chapter, we'll look at the accounting arrangements in place in central government, local government, and the national health service, focusing mainly on the system that operates in England and Wales.

## 33.5 Central government accounting

Central Government services are administered through the various government departments which operate their accounting systems on a fund basis. The basic system is that all government income, from taxes and other revenues, is paid into a central Consolidated Fund and the various departments draw off this Fund to finance the services which they provide. Any deficit in the Consolidated Fund is financed from the National Loans Fund, and vice versa.

The funds available to finance public expenditure are allocated between the various government departments. The size of the allocation to an individual department depends on the political and social priorities of the government. Of particular importance in recent years has been the government's increase in the level of public expenditure coupled with achieving better value for money from every pound spent providing the various government services.

The amount of money available for public expenditure is subject to cash limits. Spending by a department in any year is stated in cash terms. That is, the prices prevailing in the November of the previous year plus an amount to cover forecast inflation in the next year. The total level of expenditure is controlled within this cash limited amount, and the Treasury is responsible for monitoring spending and reporting to the government on the level of spending by the various departments throughout the financial year.

Following an announcement in the 1993 budget speech a major change in Government accounting took place from the 2001/2002 financial year when a system called '**Resource Accounting**' was adopted. This resulted in a switch from a receipts-and-payments-based accounting system (i.e. **cash-based accounting**) to a system based on normal commercial practice complete

with accruals and movements in cash flows. This system was introduced by the Government Resources and Accounts Act 2000 and is part of a longer-term aim to publish fully audited 'Whole of Government Accounts' (WGA) covering the whole of the UK public sector based on generally accepted accounting principles (GAAP).

Under this Act, each department is required to prepare resource accounts for each financial year, in conformity with a Treasury direction, detailing the resources acquired or disposed of during the year and the use of resources by the department during the year.

The resource accounts are prepared on an accruals basis and must give a true and fair view of the state of affairs of the department, the net resource outturn, resources applied to objectives, recognised gains and losses, and cash flows for the financial year.

HM Treasury appointed the Permanent Head of Department as Accounting Officer of each Government department, with responsibility for preparing the department's accounts and for transmitting them to the *Comptroller and Auditor General* (who is head of the National Audit Office).

In preparing the accounts, the Accounting Officer is required to comply with the *Resource Accounting Manual* prepared by HM Treasury, and in particular to:

- observe the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis;
- make judgements and estimates on a reasonable basis;
- state whether applicable accounting standards, as set out in the Resource Accounting Manual, have been followed, and disclose and explain any material departures in the accounts;
- prepare the accounts on a going-concern basis.

The responsibilities of an Accounting Officer, including responsibility (i) for the propriety and regularity of the public finances for which an Accounting Officer is answerable and (ii) for keeping proper records and for safeguarding the Department's assets, are set out in the *Accounting Officers' Memorandum* issued by HM Treasury and published in *Government Accounting*.

## 33.6 Local government accounting

The Local Government Acts 1972 and 1985 contain the statutory provisions which broadly established the present structure of London and Metropolitan Boroughs, Unitary Authorities, County District and Parish Councils. Total planned expenditure on local government services in 2004–2005 was £44 billion with approximately 75% on local education services.

The changing role of local government has accelerated in recent years particularly since 1979. In early 1994, the Financial Secretary to the Treasury told an audience of prominent local government and public sector figures that he would like to see their role diminish to that of a purchaser of services, which would almost wholly be provided by the private sector. The 'enabling' authority is seen as one mainly concerned with policy direction, the allocation of resources, determining standards and priorities and then monitoring the results. The widening of compulsory competitive tendering (CCT) was an important move in this direction, as is 'outsourcing', where local services are provided by a private company under contract, without the need for CCT and, more recently, Best Value measures (performance against a range of measurable criteria) in the provision of public services.

### The role of the Chief Financial Officer

The Local Government Act 1972 abolished specific statutory reference to the need to appoint a 'treasurer' and to the 'making of safe and efficient arrangements for receipts and payments'. What it did do, however, was to impose wider but more general responsibilities for the financial administration of local authority affairs. The 1972 Act stated:

*‘A local authority shall appoint such officers as they think necessary for the proper discharge . . . of their functions . . . Every local authority shall make arrangements for the proper administration of their financial affairs and shall ensure that one of their officers has responsibility for the administration of those affairs.’*

The Local Government Act 1988 strengthens the position of the 1972 Act by:

- requiring all Section 151 officers to have appropriate qualifications for the job
- specifying those issues on which Section 151 officers must report to the council.

The title ‘Chief Financial Officer’ is widely used, but other titles also exist (e.g. ‘Treasurer’ and ‘Director of Finances’). In practice it is for the members of an authority to determine the role of the Chief Financial Officer and to specify the terms and conditions of this appointment.

Government regulations place upon the ‘responsible financial officer’ (subject to instructions from the employer) the responsibility for determining the accounting system, form of accounts and supporting records. Further, that officer has a duty to ensure that the accounting systems are observed and that the accounts and supporting records are kept up to date.

The regulations contain several sections that are particularly relevant to the financial officer. In particular, the responsible officer is required to maintain an adequate and effective internal audit of the accounts of the body and have right of access at all times to such documents of the body which relate to the accounts of the body as they appear to him or her to be necessary for the purpose of the audit and shall be entitled to require from any officer of the body such information and explanation as is required for that purpose.

## Local Authority Financial Reporting

Local authorities prepare four main types of financial reports.

- (a) an annual revenue budget and capital programme (budget);
- (b) an information leaflet or mini-report to be sent to all council taxpayers with the council tax demand note;
- (c) a statement of accounts (traditionally referred to as an ‘abstract of accounts’) (They are legally required to publish this.);
- (d) an annual report.

The form and content of these reports is largely standardised, and must comply with four types of external requirements:

- statutory requirements, including Acts of Parliament and Accounts and Audit regulations
- government directions in the form of codes of practice and notes of guidance
- professional standards, including statements of standard accounting practice (SSAPs), statements of recommended practice (SORPs) and financial reporting standards (FRSs) and the CIPFAs *Code of Practice on Local Authority Accounting in the United Kingdom* (which specifies the form and content of the individual financial statements which comprise the statement of accounts)
- generally accepted accounting principles, consistently applied.

## The Accounting Code of Practice

The CIPFA/LASAAC (Local Authority, Scotland, Accounts Advisory Committee, Accounting Code of Practice (ACOP)) is recognised by the Accounting Standards Board as a SORP (Statement of Recommended Accounting Practice) and, since its introduction in 1991, has been regularly updated, most recently in 2004.

A typical Statement of Accounts published by a district or borough council may contain the following sections:

- (a) an explanatory foreword setting out the main financial features of the year;
- (b) a Statement of Accounting Policies;
- (c) a Statement of the respective responsibilities of the Local Authority and its Chief Financial Officer;
- (d) a Statement setting out the main features of the system of internal financial control and arrangements for internal audit;
- (e) the Consolidated Revenue Account and Notes;
- (f) the Consolidated Balance Sheet and Notes;
- (g) the Consolidated Cash Flow Statement and Notes;
- (h) a Statement summarising the collection of Council Tax and Business Rates and the appropriation of that money to the relevant providers of local services.

County Councils publish sections (a) to (g) only, but would also include the accounts of the Superannuation Fund (revenue account and net assets statement covering employees of all local authorities in its area). Police and Fire Authorities prepare separate revenue accounts and balance sheets.

### Audit Arrangements in Local Government

Local authority audits in England and Wales are overseen by the Audit Commission. A slightly different system operates in Scotland where Audit Scotland ([www.audit-scotland.gov.uk/](http://www.audit-scotland.gov.uk/)) oversees the audits on behalf of and reports to the Audit Commission. In Northern Ireland, the Northern Ireland Audit Office ([www.niauditoffice.gov.uk/](http://www.niauditoffice.gov.uk/)) oversees the audits and reports to the Department of the Environment. As when we looked at central government auditing, we will focus on the system in England and Wales.

Auditing is to a national legislative standard (Audit Commission Act 1998) and a detailed Code of Practice issued by the Audit Commission, which is currently (December 2004) being revised. The Audit Commission is an independent public body responsible for ensuring that public money is spent economically, efficiently, and effectively in the areas of local government, housing, health, criminal justice and fire and rescue services.

The audit is usually performed by the District Audit Service. However, 30 per cent of these audits are performed by private sector auditing firms.

This audit is every bit as thorough as a private sector company audit and the impact on those responsible for the stewardship of a local authority who are found to have been acting inappropriately can be very severe indeed. The highest profile case involved the Audit Commission's role as auditor of Westminster Council which resulted in a 15-year battle conducted by the District Auditor to recover amounts lost to the council from Dame Shirley Porter, former leader of the council, for her role in what was referred to as 'the homes for votes scandal'.

#### The 'Homes for votes scandal'

Between 1987 and 1989, Dame Shirley Porter who was then the leader (i.e. in charge of the stewardship) of Westminster Council kept council homes empty and sold them cheaply in the hope of boosting support for her political party in eight marginal wards (districts). By doing so, she hoped to prevent the Labour party winning control of the council. This policy was found to have cost the council £27,023,376! The case was finally settled after three appeals by a payment of £12.3 million in 2004.

When the auditors are satisfied that nothing material has been done, an unqualified audit opinion is issued, similar to the example shown in Exhibit 33.1.

**Exhibit 33.1 An unqualified audit opinion***Opinion:*

'In our opinion, the financial statements present fairly the financial position of the XYZ Borough Council as at 31 March 20XX and its income and expenditure for the year then ended.'

The website for the Audit Commission is [www.audit-commission.gov.uk/](http://www.audit-commission.gov.uk/).

**33.7 National Health Service accounting**

The National Health Service is almost wholly dependent upon central government funding (planned NHS expenditure in 2004–05 was £69 billion). Some of that funding is derived from employers' and employees' National Insurance contributions, but the bulk of it comes from general taxation. Some diagnostic services and treatments are free to patients requiring them. For other items such as spectacles, dentistry and drugs prescribed by doctors, most patients bear at least part of the cost, but there are important exemptions. In recent years, charges have been introduced for certain previously free items such as eye tests, though consultations with NHS doctors and specialists, as well as NHS hospital treatment, remain free.

Unlike local government, the NHS has no independent source of revenue equivalent to business rates or the community charge. Instead, its finances are determined by the Cabinet (i.e. the leaders of the Government) in the annual public expenditure allocation process. Individual health authorities are permitted to and do raise limited amounts of money through fund-raising activities, but the amounts are insignificant compared to their overall funding needs.

NHS provision in England and Wales is through 28 Strategic Health Authorities whose catchment areas are based on geographical boundaries broadly equivalent to County Council areas. Within this structure, the bulk of health service provision is the responsibility of Primary Care Trusts (PCTs) which typically bring together primary care (GPs, dentists, pharmacists and opticians) and the commissioning of other services, especially treatment in local hospitals.

Internal financial controls are the primary responsibility of each PCT board. The accountable officer responsible for internal financial controls on a daily basis is the Chief Executive of the Trust, who has responsibility for (i) maintaining a sound system of internal control that supports the achievement of the organisation's objectives and (ii) reviewing its effectiveness. The system of internal control is based on an ongoing risk management process designed to identify the principal risks to the achievement of the organisation's objectives; to evaluate the nature and extent of those risks; and to manage them efficiently, effectively and economically. By its nature, this form of internal control is designed to *manage* rather than *eliminate* the risk of failure to achieve objectives. It can, therefore, only provide reasonable, rather than absolute assurance of effectiveness.

The system of internal control is underpinned by compliance with the requirements of *Controls Assurance Standards* on:

- Governance
- Financial management
- Risk management.

**NHS broad financial arrangements**

Financial directives are issued by the Health Secretary and set down, in broad terms, the responsibilities and requirements for financial control. These are minimum statutory requirements,

including standing financial instructions, that form the basis upon which authorities develop their own financial control policies.

The purpose of the accounts of organisations within the NHS is to satisfy the ‘primary requirements of public accountability for the use of NHS financial resources’. The annual accounts are used as the basis for the summarised accounts which the NHS executive is required to prepare and submit to the *Comptroller and Auditor General* who examines these accounts, certifies them and lays copies of them, together with his report, before Parliament. (This part of the process is different in Scotland, as you will see in Section 33.8.)

Four main financial statements are required to be published by a Primary Care Trust:

- 1 An operating cost statement showing gross commissioning and providing costs and net cost of each after deduction of miscellaneous income.
- 2 A balance sheet.
- 3 A cash flow statement (based on FRS 1).
- 4 A statement of realised gains and losses.

As a general rule, health authorities and NHS Trusts are expected to prepare their annual accounts in accordance with accounting standards issued or adopted by the Accounting Standards Board (ASB). However, the Government considers certain principles under ASB pronouncements to be inappropriate to trusts and alternative treatments are prescribed. The annual accounts must be accompanied by a statement of accounting practice and must be certified by the director of finance and acknowledged by the chairman prior to audit. The required date for completion of the annual accounts is the 30th June after financial year to which they relate.

In addition to the annual accounts, health authorities and NHS trusts are required to complete a set of financial returns to provide various analyses of expenditure which are not obtainable from the annual accounts.

### Audit arrangements

In England and Wales, audit arrangements are overseen by the *Comptroller and Auditor General*. Audit arrangements for individual trusts and health authorities are, as with local government, provided by the Audit Commission through its District Audit Service and subject to similar regulations and code of practice.

## 33.8 Public sector auditing in Scotland

You have already learnt that the audit arrangement for local government in Scotland is slightly different from that which exists in England and Wales. For the rest of the public sector, the differences are considerably greater. In the rest of the UK, the audits of government departments are the responsibility of the *Comptroller and Auditor General*. In Scotland, Audit Scotland conducts the audits on behalf of the *Auditor General* ([www.audit-scotland.gov.uk/auditor/index.htm](http://www.audit-scotland.gov.uk/auditor/index.htm)) who reports to the Scottish Parliament.

The role of the *Auditor General* is to:

- examine how public bodies spend public money
- make sure they manage their finances to the highest standards
- make sure they achieve value for money.

Public bodies that the *Auditor General* reviews include:

- Departments of the Scottish Executive
- NHS trusts and health boards
- Further education colleges

- Scottish Water
- Government agencies and non-departmental public bodies such as Scottish Enterprise, the Scottish Prison Service and Historic Scotland.

### Learning outcomes

You should now have learnt:

- 1 What distinguishes the public sector from the private sector.
- 2 About the accounting arrangements in place in central government, local government, and the National Health Service.
- 3 About the structure of public sector auditing in the UK for central government, local government, and the National Health Service.
- 4 That there are some differences between the structure of public sector auditing in Scotland and that which exists in the rest of the UK.

### Answer to activity

- 33.1** The public sector organisations will all have similar regulations governing what they do, and performance targets set using the same criteria. As in any situation where organisations are ultimately owned by one entity, efforts will be made to achieve economies of scale (i.e. savings) and benefit from the increased efficiency and effectiveness that a control system developed using the resources of all organisations within the group can bring.

### Review questions

- 33.1** What is the public sector?
- 33.2** Briefly describe the role of the Accounting Officer of a central Government department.
- 33.3** Briefly describe the differences between the structure of local authority auditing in Northern Ireland compared to England and Wales
- 33.4** Briefly describe the differences between the structure of public sector auditing in Scotland compared to the rest of the UK.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)



# Accounting for management control

## Learning objectives

After you have studied this chapter, you should be able to:

- describe some of the deficiencies of financial accounting if it were used for management control purposes
- describe the need to avoid potential conflicts between alternative or competing objectives that may be adopted within an organisation
- explain that decision making should involve more than just the financial figures involved
- explain that the information needs of organisations are, in part at least, a function of their size
- describe the difference between the three areas in which management operates, and their different information needs
- explain that accounting information is only one part of the overall system in which organisations operate
- describe how the accounting system is affected by the surrounding environment both inside and outside the organisation in which it operates

## Introduction

In this chapter, you'll learn about the deficiencies of financial accounting information for decision making. You'll also learn about the impact of organisational objectives, people and organisation size on decision making and about the three-part role of management. Finally, you will learn about the manner in which the accounting system interacts with its environment and of the relationship between quantitative and qualitative data and formal and informal information systems.

### 34.1 The part played by financial accounting

So far your studies have been concerned primarily with the recording function of accounting, often called bookkeeping, and the drafting of the financial statements of different types of organisations, such as partnerships and limited companies. The term generally used for your studies up to this point is '**financial accounting**'. Much of financial accounting is concerned with legal requirements, such as complying with the provisions of the Companies Acts and accounting standards when drafting financial statements, or keeping an accounting record of a customer's legal indebtedness, i.e. a debtor's account.



With companies, the annual report represents the information given to the shareholders by the directors of their running of the company during a particular year. In other words, it is a description of the directors' 'stewardship' of the company. The financial statements are also given to other interested parties, such as the bankers to the firm, creditors, inspectors of taxes, etc.

While financial accounting is necessary from a legal point of view, it cannot be said to be ideal from the point of view of controlling the activities of a firm. Your studies would therefore be incomplete if you had seen only the 'stewardship' function of accounting as represented by financial accounting. The use of accounting for controlling the activities of a firm is probably more important. In this chapter, we shall briefly consider accounting for 'management control' purposes.

The word 'management' has nothing at all to do with whether or not an entity is a limited company, a plc or small a family-run business. It means the people who are managing the affairs of the firm, whether they are directors, partners, sole traders or 'managers' classified as those employees who are in charge of other employees.

## 34.2 Deficiencies of financial accounting

Before starting to examine accounting for management control, let's look first at the deficiencies of financial accounting when used to control the activities of an organisation.

**The first major deficiency of financial accounting is that it deals with operations that have already occurred.** It deals with the past, not the future. It is possible to control something while it is happening, and control can be arranged for something that is going to happen but, when it has already happened without being controlled, the activity has ended and we are too late to do anything about it. For example, if a company incurs a loss and we do not realise it until long after it has happened, the loss obviously cannot be prevented.

What we really want to do is to control affairs so that a loss is not incurred if at all possible, and to be able to call on accounting techniques to help us do so. However, it certainly does not mean that we are not interested in the past. We can learn lessons from the past which can be very useful in understanding what is going on now, and what is likely to be happening in the future.

**The second major deficiency of financial accounting is that it is concerned with the whole of the firm.** Thus the trading account of a business may show a gross profit of £60,000 but, while it is better to know that than to have no idea at all of what the gross profit is, it does not tell management much about past transactions. Suppose, for example, that it manufactures three products – watches, pens and cigarette lighters. Some possibilities of how much of the gross profit was attributable to each of the products are shown in Exhibit 34.1.

### Exhibit 34.1

	<i>Various possibilities of profits and loss for each product (£s)</i>			
	1	2	3	4
Watches	20,000	5,000	30,000	(30,000)*
Pens	20,000	70,000	28,000	65,000
Lighters	20,000	(15,000)*	2,000	25,000
Total gross profit	60,000	60,000	60,000	60,000

\*Losses are shown in brackets

These are only some of the possible figures of profit and loss for each product which could result in an overall gross profit of £60,000. The figure of total gross profit alone provides very few clues as to what lessons can be learnt. If, say, possibility number 2 was, in fact, the real situation, it would stimulate further discussion and investigation as to why these results had occurred. It could, perhaps, result in the closing down of the section of the firm which makes

cigarette lighters if, after investigation, it was found to be in the interests of the firm to cease manufacturing them. (As you will learn later, simply because it is making a gross loss may not necessarily mean it would be wrong to continue manufacturing cigarette lighters.) Many more lessons can therefore be learnt if the business's activities can be examined piece by piece instead of looking at the overall, summarised results.

For these and a number of other reasons, **financial accounting is of little use by itself for management control purposes**. It does not mean that it is of no use at all for control purposes – for example, the financial accounting system may reveal that the debtors at a point in time are £50,000, something that management need to know if they are to control their finances properly – but much of the financial accounting information produced is of little use in controlling the business.

#### Activity 34.1

Imagine we bought a building in 1990 for £40,000 that is now worth £120,000. If we rented a similar building now it might cost us £30,000 a year. What use would you make of the knowledge that the building originally cost £40,000 when deciding whether or not to rent a similar building now, or buy another one for £120,000?

Let's consider in more detail, what management control seeks to do, and why.

### 34.3 Objectives of the firm

If we want to discuss management control we must first of all ask ourselves what is its purpose? We can only have control if it is for a particular purpose, otherwise how can we possibly determine what we may need to control, never mind start doing anything at all.

It might seem obvious that the objectives of an organisation should be spelled out clearly and unambiguously. In fact, the writing down of a formal set of objectives for an organisation is very often overlooked. It is often, instead, assumed in such cases that the objectives are obvious. As a result, in many cases, the employees of the organisation could be pulling in many different directions, as they all have different ideas of the objectives of the organisation.

Some of the possible objectives an organisation may have include:

- To ensure that the maximum profit is made. This still is not clear; do we mean profits in the long term or the short term?
- To obtain a minimum specific share of the market for its goods or services.
- To have the greatest share of the market for its goods or services.
- To achieve the highest possible level of quality in the goods being manufactured or services offered.
- To ensure that our customers are fully satisfied with our goods and services.
- To ensure full employment for its employees.
- To ensure that its employees' welfare is maintained at a high level, in terms of such things as back-up facilities and adequate pension schemes.
- To ensure that its employees receive the best training and are kept fully up to date with the latest technology for our sort of business.
- To cause as little damage as possible ecologically.
- To progressively take over all its major competitors.

#### Activity 34.2

What other objectives can you think of? Try to think of another two. If you can, try to make them objectives which cannot be identified or demonstrated using information provided by financial accounting.

You should now be beginning to see for yourself that there are many things which it would be useful to know about an organisation that cannot be provided by financial accounting.

If you look at the above list of possible objectives, you will see that some simply cannot be achieved at the same time – they contradict, or are incompatible with, one another. Let's look at how this problem of conflict between objectives can be addressed.

### 34.4 Conflicts between objectives

Most organisations have more than one objective, some compatible with some others and some not. By that we mean that pursuit of one objective may impact upon the organisation's ability to achieve some of its other objectives, and that, as a result, no objective can be considered completely on its own.

Take, for example, the objective of maximising profit being pursued at the same time as the objective of causing as little damage as possible ecologically. If any funds have to be spent in order to achieve the second objective, the first objective is automatically undermined. There would be an additional level of conflict if the ecological expenditure was being made voluntarily rather than being forced on the organisation by the authorities. Even where it was being forced on the organisation, it would raise a conflict as the firm would want to do so in the cheapest possible way so as to maintain its objective of profit maximisation. Cheapness may be achieved by relaxing controls so that a small but noticeable level of ecological damage occurred which just happened to be within the limit set by the government, thus enabling maximisation of the profit objective within the constraints of the ecological objectives.

Similarly, maintaining a very high quality of goods could mean lower profits if a large number of items manufactured are scrapped because they are not up to standard. Lowering the quality could possibly increase profits but would result in non-attainment of the quality objective.

#### Activity 34.3

Both these examples have something in common relating to the timeframe in which the actions taken can be justified. What is it?

**It is thus essential to ensure that the objectives are very clearly spelled out and prioritised.** In effect, the objectives should be stated in terms of Objective A being sought, subject to the constraint that Objective B must be achieved. Otherwise people will easily misunderstand them and because of this the firm may not proceed in the direction that is desired. **It is also essential that an appropriate timeframe is considered when resolving conflicting objectives.**

### 34.5 People and management control

**The most important resource of any organisation is the people who work for it.** A danger exists that a great deal of care and attention may be given to designing a management control system and operating it, but it is a complete failure because the people in the organisation did not use it effectively. Systems and figures do not themselves do anything. It is the people in the organisation who take (or do not take) the necessary action that determine if a successful outcome is to result.

Figures thrown up by control systems are only part of the evidence available when a decision has to be made as to the necessary action to take. A department may be incurring losses now, but the sales manager may state that he believes sales will increase soon and that the department will then rapidly become profitable. **If decision makers use accounting figures as the only criteria on which action should be based, there would be some very poor decisions taken by management.**

Many very successful products have incurred losses at first, but have eventually proved successful because the organisation had faith in the product and persevered with it.

One important feature of any effective management control system is that it is integrated into the operations of the existing systems and used in an appropriate way. For example, if exactly the same system of management control was used in three different organisations, A may find that its control system was useless because no one acted on the data produced. In B, the control system might have damaged the organisation because management used the data as though it were the only criterion in gauging the actions it should take. In C, it might be very effective because the management saw the data as a useful guide in planning and control and had also made certain that the rest of the organisation took the same view.

How human beings use and react to a management control system is, therefore, at the heart of the problem of ensuring that management control systems are effective.

## 34.6 Different sizes of organisations and the decision-making process

Part of this book is about information which is intended to be used by the management of an organisation. For a small and simple organisation the information needs of management may be limited and can be obtained by direct observation – using the eyes to look and the voice to ask questions.

For example, a person managing a greengrocer's stall in a street market can often operate the business effectively without the assistance of any formal records or analysis. What he buys is determined by the goods available in the local wholesale market and his personal knowledge of what his customers are prepared to buy at a given price. His records will probably centre around the recording of cash – the details of his sales and his expenditure. However, apart from the essential requirement of maintaining an appropriate level of cash, these records do not help him in the day-to-day management of his business operations.

In contrast, if we look at the buyer responsible for buying fresh fruit and vegetables for a large supermarket chain, certain differences emerge. The basic decision about what to buy at a given price remains the same. However, a large organisation has a much wider choice of where and how to buy than a small one. The buyer from the large organisation may, for example, be able to enter into contracts directly with growers and to enter forward contracts for the supply of produce (for example, a farmer agrees at the start of the summer to sell all his summer output of potatoes and peas to a frozen foods manufacturer at a fixed price).

In a large supermarket chain, the buyer will not be in regular direct contact with the many different sales outlets and therefore relies upon written information to keep him in touch with demand. He does not have to listen to complaining customers! Similarly because there will be many more potential sources of supply than exist for a smaller business, he needs more formal information to keep him in touch with market prices than would be the case were he employed by a smaller organisation.

One of the other features about large organisations which distinguishes them from smaller ones is that responsibility for running the business is shared between many different people. In order to ensure that the operations of the organisation are carried out efficiently and effectively, there needs to be some criterion to measure the performance of the managers. In a small organisation, the poorly informed proprietor will either, at best, make a poor living or at the other extreme, go out of business. Thus success or failure is clearly the sole proprietor's own responsibility. In a large organisation, the same things can happen overall, but the situation may be obscured by a swings and roundabouts effect of some good sections making up for some bad. A management control system should help identify the problems and problem areas within an organisation.

## 34.7 The management process

The way that management operates in an organisation can be divided into three distinct activities:

- (a) forecasting and planning;
- (b) controlling operations;
- (c) evaluating performance.

### (a) Forecasting and planning

Forecasting and planning is the process by which senior management decides on major overall issues concerning what the business is going to do and how it is going to do it. It involves an assessment of information about the future which is produced through a process known as 'forecasting'. When a forecast has been prepared, senior management can plan how to achieve the organisation's objectives. 'Planning' is the process of co-ordinating the resources available to attain an objective.

### (b) Controlling operations

Controlling operations involves management in a number of processes and requires several different kinds of information. The plans produced by senior management must be converted into an operating pattern which matches the parts into which the organisation is divided. This process breaks down the overall plan into detailed operating plans each of which relates to the management structure of the company. This process is called 'budgeting'.

When actual events occur, the information recording those events needs to be measured in such a way that it can be compared with the plan. This provides feedback on the success of the plan.

Controlling operations effectively also requires that information is provided in a form designed to help managers take the decisions which their jobs require. For example, information about the profit from one product as compared to another will enable a decision about how many of each product to make.

### (c) Evaluating performance

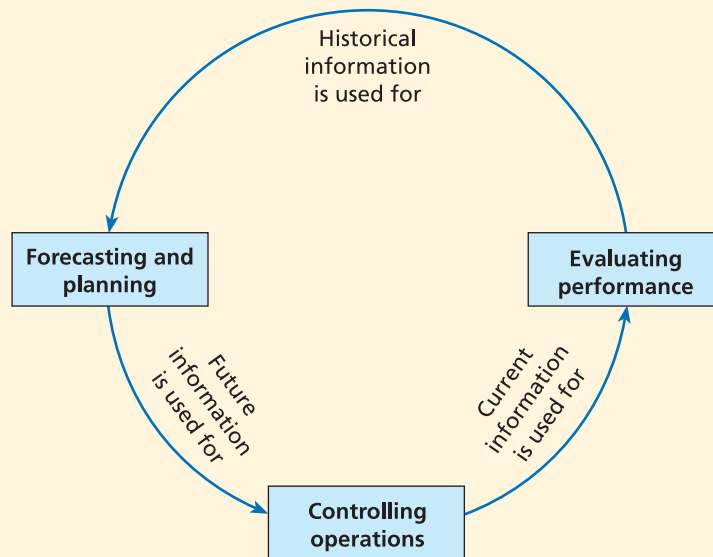
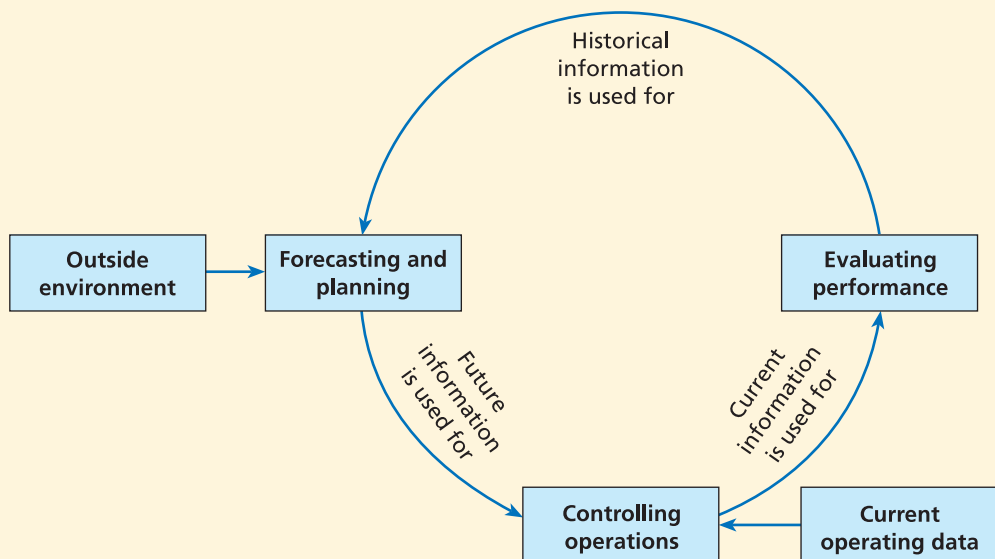
Evaluating performance involves the analysis and assessment of actual results. This is partly, but not exclusively, a process of comparison with plans. The information on which plans were based may have been inaccurate. Thus, the analysis of performance, while involving comparison of actual results with planned results, needs considerable judgement as to what the plans should have been had all the information now available been known when the plans were drawn up.

The three activities we have described are by no means independent of each other. In reality, they follow a distinct sequence. One way of looking at this is in the form of a cycle in which information is circulating continually from one activity to another, as shown in Exhibit 34.2.

In this diagram, information is shown flowing around from one activity to another. Thus, for example, forecasts for a period may be improved before the period they apply to ends by taking account of the analysis of what happened during the previous period *and* during the period to which the forecast relates.

As shown in Exhibit 34.2, forecasting and planning relate to the future. Controlling operations relates to concurrent events – the here and now. Evaluating performance can only be concerned with the past.

The diagram we have just considered only looks at internal information. Exhibit 34.3 recognises that information is being fed into the process from outside the organisation, both from the general

**Exhibit 34.2****Exhibit 34.3**

environment in which the organisation operates and as a result of interactions between the organisation and its operating environment.

Senior management has to take into account all the information it can about the external environment, such as competition, economic cutbacks, etc. Controlling operations also receives information about actual business events, e.g. sales activity, purchasing activity, etc.

## 34.8 Types of management information

No attempt has been made so far to describe the nature of the information which management requires. Information may come in many shapes and forms. Accounting and, therefore, this book is concerned with information that is capable of being expressed in numerical terms. That is, with information that can be quantified. Information of a more general nature, such as information about people's feelings or views, may be very useful to management but cannot be quantified. Such information is, therefore, usually part of the informal rather than the formal information system of an organisation.

### Activity 34.4

Apart from what is said above, what do you think is the main difference between formal and informal information systems?

Within the body of quantified information, it is normal to identify that part which can be measured in money terms. This part of the information system is called the 'accounting information system'. The accounting information system is a very important element of the organisation's information system since the organisation is basically an economic unit which must survive in conditions of economic scarcity and competition. In other words, an organisation which does not meet its economic objectives will eventually fail or be taken over, hence the central importance of accounting information.

However, other quantified information may be very important for management. For example, if you are a farmer you will measure the yield of milk from your cows in the first instance in litres. A production manager will be very concerned to monitor the tonnages produced on his machines. A supermarket will want to know how long customers have to queue at the checkout (and whether customers are being lost because it takes too long). None of these items is of interest to those preparing accounting information.

## 34.9 Quantitative methods in the information system

A management information system is the specialist information system designed for the management of an organisation.

A modern management information system collects all the data together (into what is called a 'database') and, after appropriate processing, provides the information which is important to each manager. Such an information system will include some information that originated in the accounting information system. As these systems have become more sophisticated (largely as a result of the impact of widespread computerisation), the distinction between accounting information and other types of management information has tended to become less meaningful. The techniques of quantitative analysis (or statistics) apply to all the data in this system, whether or not they are accounting data.

## Learning outcomes

You should now have learnt:

- 1 Financial accounting fulfils a stewardship function by reporting past performance and financial position.
- 2 Financial accounting information is of only limited use for management control purposes, for which other forms of data and information are required.
- 3 It is important that organisational objectives are clearly defined and that the financial accounting information system is designed to meet and support those objectives in the most efficient and effective way.
- 4 Management is concerned with three areas of activity:
  - (a) forecasting and planning;
  - (b) control;
  - (c) evaluating performance.
- 5 The financial accounting information system does not exist in a vacuum, it interacts with, and is affected by, the environment in which it is operating and must be designed accordingly.

## Answers to activities

- 34.1** The original cost is now completely irrelevant for decision-making purposes, whether at this time or at some point in the future. Yet, in many cases, it is the £40,000 that will appear in the current year's balance sheet and, in that case, the £40,000 is included in the amounts used to calculate ROCE and other key profitability and efficiency ratios. This is one of the reasons why FRS 15 allows fixed assets such as buildings to be revalued on a regular basis.
- 34.2** (i) To be identified as the most innovative company in the field and (ii) to have the lowest rate of staff turnover in the industry are two, neither of which can be identified or demonstrated through the use of information provided by financial accounting.
- 34.3** Lowering the standard of pollution control or the quality of product could possibly increase profits in the short term, but it could mean lower profits in the long term if customers deserted the organisation because it had a reputation for causing pollution or its goods were considered to be second-rate. Short-termism can be very counterproductive and often leads to the wrong decisions being taken, from a long-term perspective. However, conflicting objectives can often become compatible objectives when a long-term view is taken. For example, in the ecology example, by eliminating pollution an organisation may be able to enhance its reputation sufficiently to recoup the additional cost through increased revenues and, thus, maximise its profits in the long term.
- 34.4** At its simplest, an informal information system is one that operates without rules and procedures. Information gets passed through it virtually accidentally, in the same way as you may learn what someone did last weekend during a casual conversation. An informal information system has no firm structure. It does not have a hierarchy and information does not undergo any uniform or routine transformation as it passes around the information system. Information is not constrained by the nature of the information system and can be both qualitative and quantitative.
- A formal information system is everything an informal information system is not. It has rules, procedures, a hierarchy, a routing system for data and information flow and set procedures for data and information processing. The data and information within it tends to be quantitative, though this is changing as computer systems become capable of greater storage. One key aspect of the formal information system is that nothing gets into it that isn't identified beforehand as an appropriate form of input. Formal information systems also tend to be fairly inflexible and slow to change compared with informal ones. Thus, for example, if the VAT rate changes and the information system cannot be easily or quickly amended to accept the new VAT rate, it may be some time before the necessary changes can be made and the information adjusted to reflect the change.



## Review questions

**34.1** 'Financial accounting looks behind, whilst management accounting looks ahead.' To what extent does this quotation accurately reflect the role of the two branches of accountancy?

*(Edexcel: GCE A-level)*

**34.2** 'Financial accounting is non-dynamic, backward looking, conservative, as objective as possible, and subject to statutory and other regulation. Management accounting is future oriented, is dynamic, produces forward looking figures, should not be too concerned with objectivity, and is not generally subject to external regulation.' (Prof. Michael Bromwich)

Justify this statement, giving examples to illustrate your answer.

*(Edexcel: GCE A-level)*

**34.3** What are some of the deficiencies of financial accounting?

**34.4** Why is it important that the employees of an organisation should clearly understand what the objectives of the organisation are?

**34.5** How can there be a conflict between the various objectives of an organisation?

**34.6** Describe how the management process is carried out.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# COSTING



## Introduction

This part looks at what constitutes cost and at four techniques used to derive cost.

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<b>36</b>	Absorption and marginal costing	531
<b>37</b>	Job, batch and process costing	555



# Elements of costing

## Learning objectives

After you have studied this chapter, you should be able to:

- explain why information must fit the purpose for which it is prepared
- discuss why the costs of obtaining information should be less than the benefits of having the information
- describe the flow of costs through financial accounts
- describe the flow of costs through a manufacturing company
- classify expenses appropriately
- explain the importance of an effective costing system
- explain the importance of cost allocation in the context of control

## Introduction

In this chapter, you'll learn how costs flow through financial accounts and through a manufacturing company's accounting system into its manufacturing account. You will also be introduced to, and reminded of, terminology relating to costs and expenses and learn the difference between them through an exercise in cost classification.

### 35.1 Management accounting

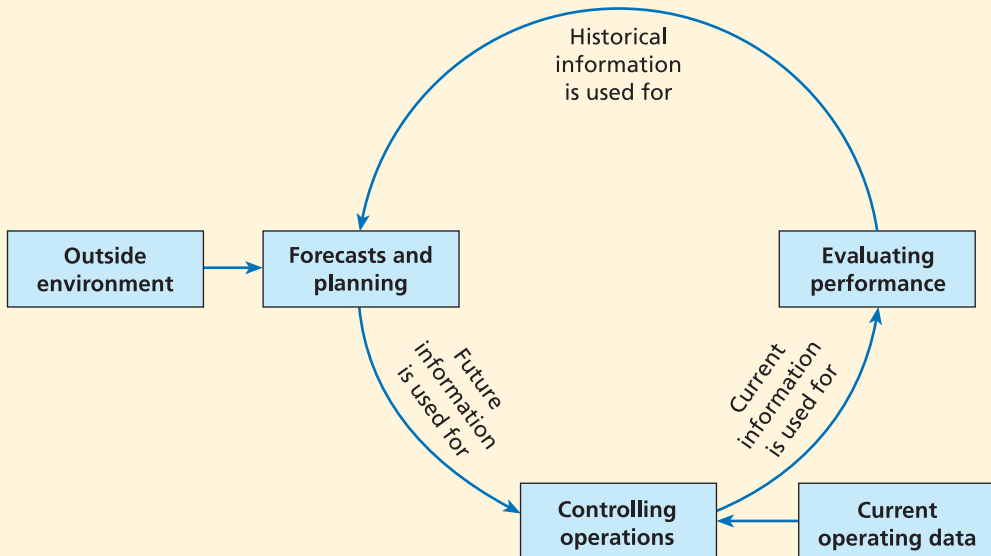
So far you have learnt about bookkeeping and the preparation of financial statements. These are the two principal components of financial accounting. As you learnt in Chapter 34, the information as produced by financial accounting is usually historic, backward-looking and produced (mainly) for the use of decision makers external to the organisation.

There is a second side to accounting. This one is generally forward-looking and capable of being used to aid managerial control, forecasting and planning. Similarly to financial accounting, it also consists of two components. One where costs are recorded, the other where the data is processed and converted into reports for managers and other decision makers. The cost recording component is called '**cost accounting**' and the processing and reporting component is called '**management accounting**', which is also the name used to refer to this side of accounting. It is also sometimes referred to as 'managerial accounting'.

**Cost accounting data also feeds into financial accounting**, where it is used to derive the cost and expenditure figures that appear in the trading and profit and loss account. However, the two branches of accounting use the data and information differently. Referring once more to

the third exhibit in Chapter 34, reproduced here as Exhibit 35.1, you can follow the flow of data and information within it and see how and where management accounting information is used.

### Exhibit 35.1



Management accounting produces the financial forecasts that guide planning. It embeds controls into the flow of operating data and uses them to control activities within the context of the plans. It evaluates performance and uses the information that is produced to underpin the forecasts that guide planning.

As you can see, while it frequently looks backwards to gather information, the main focus of management accounting is on producing information (i) for control over current operations and (ii) to forecast and plan for the future.

#### Activity 35.1

Which aspects of this exhibit also relate to financial accounting?

For financial accounting and management accounting to operate effectively, they both need the raw data that is then built up and processed into the information they produce. As mentioned earlier, the process whereby this data is gathered is known as cost accounting.

## 35.2 Costs for different purposes

Cost accounting underpins both the management accounting system and the financial accounting system of an organisation. Without cost accounting, such systems could not exist as they would be unable to determine with any accuracy the costs and expenditures relating to each aspect of their activities. Before entering into any detailed review of costs, it is better if we **ask ourselves first of all what use we are going to make of information about costs**. By doing so, the context and motivations for cost accounting will be revealed, thus making it easier to understand the nature of the costs themselves.

Let's do so, first, by referring to something which is not accounting, and then relating it to accounting. Suppose you had a job in a local business and that your employer has just left you a message asking you to measure the distance between Manchester and London. As you thought about this request, the following thoughts might go through your head:

- 1 **How** does he want the distance measured? Some possibilities are:
  - (a) from the southern outskirts of Manchester to the northern outskirts of London;
  - (b) from the accepted geographical centre of London to the accepted geographical centre of Manchester;
  - (c) to the centres of the two cities calculated as mathematically precise points;
  - (d) by road – this could be just major roads, just minor roads, or could be a mixture of both – the main requirement being the quickest route by road;
  - (e) by canal;
  - (f) by train;
  - (g) by air; allowance may or may not be made for the distance covered by the aircraft which would include climbing to an altitude of 5,000 feet or perhaps 40,000 feet, or might ignore the distance travelling in achieving an altitude.
- 2 The **cost** of obtaining the information. Measuring distances (or measuring costs) is not cost-less itself. Using very sophisticated instruments to get accurate measurement can be very expensive indeed. On the other hand it might just be a matter of measuring the distance on a map with a rule and converting it into miles – this would cost hardly anything at all.
- 3 What is the **purpose** for which the measurement will be used? This has been deliberately left as the last point, but in fact it should have been the first question that came into your mind. Illustrations of the use could have been as follows:
  - (a) he is going to drive from Manchester to London by car and wants a rough idea of the mileage so that he can gauge what time to set off if he is to arrive before it gets dark in London;
  - (b) he might conceivably want to walk it;
  - (c) he might be submitting a tender for the building of a motorway by the shortest possible route, cutting tunnels through ranges of hills;
  - (d) perhaps he wants to send goods by canal;
  - (e) maybe he wants to arrive as close as possible to an underground station;
  - (f) he might be an amateur pilot who wants to fly from Manchester Airport to London Airport.

You may also wonder about how accurate an answer is required.

The lesson to be learnt from all this is that the measurement required depends entirely on the use that is to be made of it, i.e. of the data. Too often, businesses make measurements of financial and other data without looking first at the use that is going to be made of it. In fact, it is sometimes said that 'information' is useful data that is provided for someone to use for a specific purpose and that, unless it is suitable for that purpose, it is worthless.

**Thus, data given to someone which is not relevant to the purpose for which it is required is simply not information.** Data which is provided for a particular purpose, and which is completely wrong for the purpose, is worse than having no data at all. At least when there is no data, the decision maker knows that the best that can be done is to guess.

### Activity 35.2

Apart from the obvious fact that it is irrelevant, why is useless data such a bad thing?

Having discovered what information is required, you need to look at the costs involved if the information is to be obtained. You need to consider the following:

**1 *What is the data on costs wanted for?***

It might be needed for the preparation of the financial statements, for management control or for decision making. Different data on costs are wanted for different purposes.

For example, the cost of each item of stock held at the end of the financial year is needed for the preparation of the financial statements; the cost of each item in stock is needed for management control to verify whether items are being manufactured or purchased at an appropriate price; and the cost of each unit of stock held is required to decide what price to sell it at. Three very different uses of three very similar items.

**2 *How are the costs to be measured?***

Only when the purpose for which costs are to be used has been identified can the measurement process be selected. Sometimes, financial accounting needs a precision in calculating certain costs which is not needed in management accounting; sometimes the opposite is the case. It depends on the costs involved and why they are required.

**3 *The cost of obtaining data should not exceed the benefits to be gained from having it.***

This does not refer to some cost data which is needed to comply with various provisions of the law but such exceptions are rare.

Let's look at some examples to illustrate the cost/benefit factor:

- (a) Spending £100 to obtain cost data which will be used as a basis for pricing many of a company's products. If the costs used had been 'guessed' rather than actual figures, errors in the sales prices derived from those costs could have led to large losses as items were sold at prices lower than their actual cost while others were priced so high they could not be sold.
- (b) Spending £10,000 to find data on sales which the sales manager will toss into the waste-basket, because it is not the sort of data she wants, is obviously money wasted.
- (c) Spending a lot of time and money to find out that the stock values on a particular day were £2,532,198 when such precision was not needed. Perhaps the chairman was having an informal chat with the bank manager, and all he needed to know was an approximate stock valuation. The approximate figure could have been found easily and at little cost, so here the costs of obtaining the information have exceeded the benefits of having it.

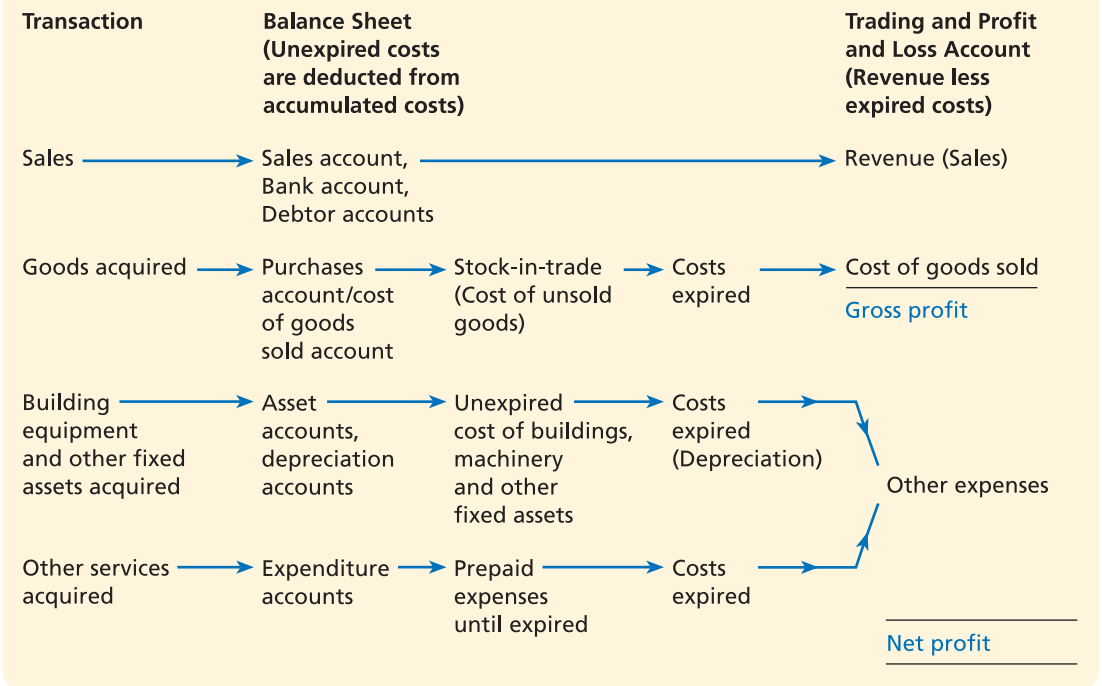
**When it is known what the costs are for, and how much may be spent on obtaining them, an appropriate method to be used to obtain them can be selected.**

## 35.3 Past costs in trading companies

There are many classifications of cost. As we go through the rest of this chapter, we'll summarise briefly those that you already know about. The first of these is historical cost.

### Historical cost

Historical costs underpin financial accounting as we know it today. Exhibit 35.2 shows a simplified view of costs flowing through the financial accounting system from original transaction to the ledgers to the financial statements and the calculation of profit. Income from sales has been included simply so as to enable profits to be shown.

**Exhibit 35.2****35.4 Past costs in manufacturing companies**

You probably covered the topic of manufacturing accounts when you studied *Business Accounting 1*. In this chapter, we will look at it in more detail, as it is essential for a study of cost accounting. First, a couple of definitions:

**Product costs**

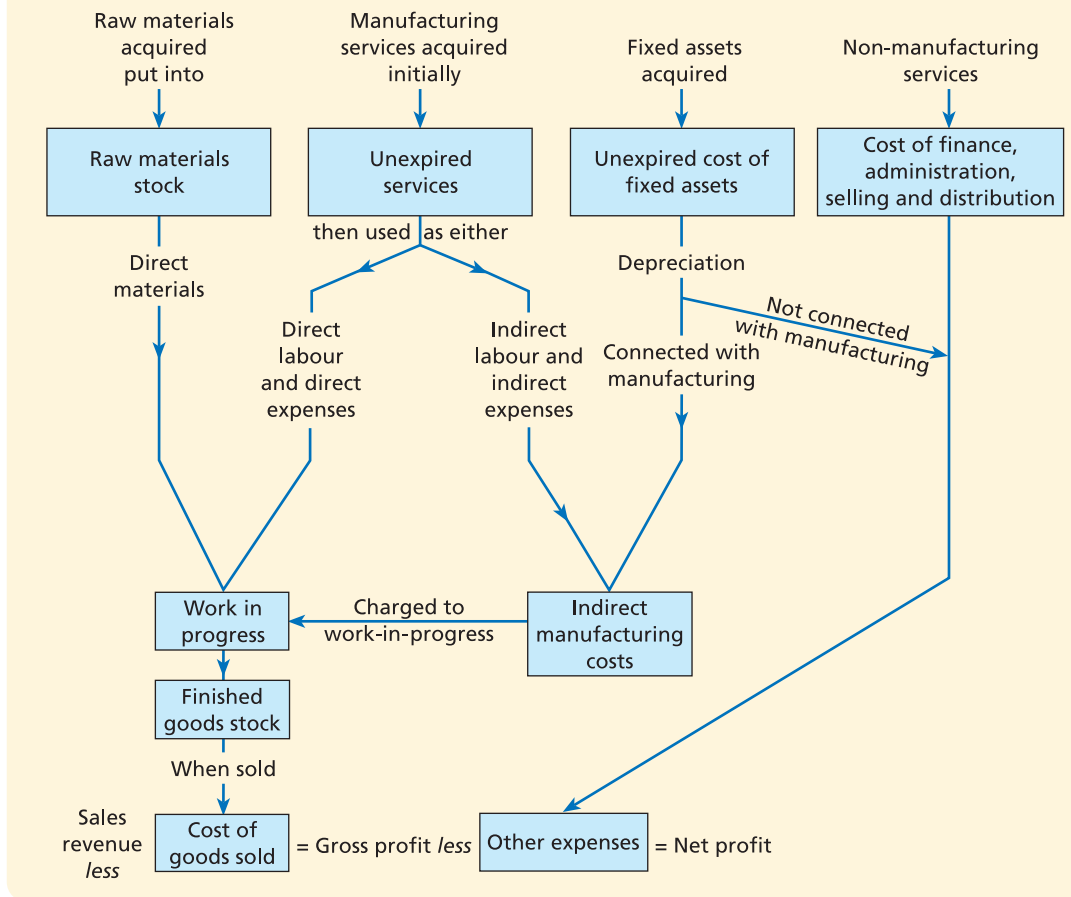
These are the costs attributed to the units of goods manufactured. They are included in the calculation of the cost of goods manufactured in the trading account, and would normally be part of the valuation of unsold goods if the goods to which they refer had not been sold by the end of the period. Product costs are, therefore, charged against revenue only when the goods they relate to are sold.

**Period costs**

Period costs are non-manufacturing in nature, i.e. selling and distribution, administration and financial expenses. They are treated as expenses of the period in which they are incurred irrespective of the volume of goods sold.

Knowledge of the differences between these two types of costs is acquired so that manufacturing accounts may be produced. Exhibit 35.3 shows the flow of costs through a manufacturing company from initial transaction to their inclusion in the cost of work in progress and finished products.



**Exhibit 35.3**

Exhibits 35.2 and 35.3 show what you use cost information for in financial accounting: to produce the information you need in order to prepare the financial statements. In management accounting, there is a different emphasis, some of which overlaps with the needs of financial accounting, but much of which is for completely different purposes.

### 35.5 Further costs defined

The following is a more detailed description of costs than you will have encountered previously.

- *Direct materials* are those materials which become part of the finished goods, subject to the proviso that the expense involved in tracing the cost is worthwhile. Some items which, strictly speaking, are direct costs, may be treated as indirect materials even though they are part of the finished product because the cost cannot be ascertained easily. (This is an example of application of the cost/benefit test.)

- *Direct labour* comprises of those labour costs which are incurred in converting direct materials into finished goods, also subject to the proviso that the expense involved in tracing this cost is worthwhile.
- *Direct expenses* are those expenses which can be traced directly to the product being manufactured. These are fairly rare, but an example would be a royalty payment where the production of each unit produced resulted in, say, £1 being due to the owner of a patent on that product.
- *Prime cost*: the total of direct materials + direct labour + direct expenses is called prime cost.  
Accountants each have their own opinion as to whether certain costs are worth tracing as being of a direct type, as it will often be a matter of judgement which defies any easy proof whether or not the expense of tracing the cost exceeds the benefit from so doing. Thus, if two different accountants independently determine the prime cost of a range of products, it is unlikely that all of the amounts calculated will be the same. You should get used to the idea in accounting that disagreements of this kind will often occur. When such differences are brought to light (as may occur if an auditor decides to check the amounts calculated by the company's accountants), they may only be settled by a compromise or appeal to someone in higher authority to settle the argument. This relates to many things in accounting besides the decision as to whether a cost is direct or not.
- *Indirect manufacturing costs* or *factory indirect expenses* or *manufacturing overheads* are three names for the same thing – all the expenses concerned with the manufacturing process which have not been treated as being of the direct type. Because there is no easily traceable direct connection between them and the goods being manufactured, these costs must be apportioned between the goods being manufactured in a logical fashion. (We will look at how this is done later.)

(Note: These expenses are often simply referred to as 'overheads'. As we progress through the chapters that follow, we will gradually increase use of that term. However, in order to emphasise the true nature of these expenses, we will start by using the more complete and more informative 'factory indirect expenses'. Do not forget that the two terms are simply different names for the same thing. Examiners usually use the term 'overheads'.)

- *Production cost*: the total of prime cost + indirect manufacturing costs is called production cost.
- *Administration, selling and distribution and finance expenses* are common to both trading and manufacturing firms.
- *Total cost*: If we add together production cost and administration, selling and distribution, and finance expenses, the resultant figure is known as total cost. To summarise:

	£
	Direct materials
add	Direct labour
add	Direct expenses
	<u>000</u>
Gives:	<b>Prime cost</b>
add	Indirect manufacturing costs
	<u>000</u>
Gives:	<b>Production cost</b>
add	Administration expenses
add	Selling and distribution expenses
add	Finance expenses
	<u>000</u>
Gives:	<b>Total cost</b>
	<u>000</u>

**Activity  
35.3**

Here is a list of typical types of expenses found in a manufacturing firm. These can be analysed as to whether they are direct materials, direct labour, direct expenses, indirect manufacturing costs, administration expenses, selling and distribution expenses, or finance expenses. In the right-hand column, write down what type of expense each item is.

Cost	Cost analysis
1 Raw materials for goods – identifiable with product made	1 _____
2 Rent of factory buildings	2 _____
3 Sales staff salaries	3 _____
4 Wages of machine operators in factory	4 _____
5 Wages of accounting machine operators in office	5 _____
6 Depreciation of lathes in factory	6 _____
7 Depreciation of typewriters in office	7 _____
8 Depreciation of fixtures in sales showrooms	8 _____
9 Supervisors' wages in factory	9 _____
10 Royalty paid for each item manufactured	10 _____
11 Works manager's salary: he reckons that he spends $\frac{3}{4}$ of his time in the factory and $\frac{1}{4}$ in general administration of the firm	11 _____
12 Raw materials incorporated in goods sold, but too difficult to trace to the goods being made	12 _____
13 Depreciation of motor vehicles used for delivery of finished goods to customers	13 _____
14 Interest on bank overdraft	14 _____
15 Wages of crane drivers in factory	15 _____
16 Discounts allowed	16 _____
17 Company secretary's salary	17 _____
18 Advertising	18 _____
19 Wages of staff of canteen used by factory staff only	19 _____
20 Cost of hiring special machinery for use in manufacturing one special item	20 _____

**35.6 Advantages of a costing system**

So far, we have looked at the various elements of cost from the perspective of the whole organisation. A classification of costs from that perspective is necessary so that the overall production cost can be ascertained so enabling cost of sales, valuation of the closing stock of finished goods and the valuation of work in progress to be calculated.

What most businesses want to know is how much each item it produced has cost to make. As a result, simply knowing the total cost is not sufficient. These costs must be analysed further. They also want to know what costs are likely to be in the future. Again, more analysis is needed. Cost accounting is the process of measuring and recording all these costs.

To be worth the effort, any costing system must bring about better control of the firm in guiding it towards its objectives, and **the benefits to be derived from the costing system must be greater than the expense of operating the costing system**. We must, therefore, look at the possible advantages to be gained in carrying on further analyses of cost:

- 1 Once expenditure is traced down to each item produced, or each batch of items produced, it becomes possible to ascertain the contribution of each item to the profitability of the business. The desirability of stopping apparently unprofitable activities can then be assessed.
- 2 Once the profitability of each item produced is known, the reasons for increases or decreases in profits can be seen more clearly.
- 3 It becomes easier to forecast future results if we know more about the operations of all the various parts of the business. When forecast results are not achieved the availability of detailed cost information makes it possible to highlight any cost-based reasons for the failure to achieve the forecast results.
- 4 Estimates and tenders can be prepared in future with far greater confidence – previously such calculations as were done must have been largely guesswork. Fewer errors should, therefore, arise because of the greater knowledge gained via the costing system.
- 5 Improvements in various activities of the business may come about because of the more relevant information that can be supplied. Thus a machine which had always been thought to be quite cheap to use may turn out to be very expensive. This may result in an investigation which would not otherwise have happened and it may, consequently, be found that a simple attachment to the machine costing, say, £10 would achieve a saving of £100 a year.
- 6 As you will see, a very important advantage is a major increase in the level of control that can be exercised over expenditure, and it can be achieved because an individual can be made responsible for the expenditure under his/her control.

Many advantages are gained by having a cost accounting system that provides this level of detail of cost information. **It is, however, now a convenient point to remind you that accounting techniques themselves do not solve problems, people are needed to do that**. When armed with the cost information that management accounting techniques can provide, managers and other internal decision makers are able to make much more sensible decisions about what should be done to aid the progress of the business towards its objectives.

For example, imagine trying to decide which item to stop producing out of twelve items made by a business if you have little information as to the amount each item contributes towards the profitability of the business. The best solution could be to change the layout of the factory; or provide special training to certain employees; or to make changes in the system of remunerating employees and so on. Without appropriate information, you can only guess at what to do.

The information provided by accounting is only one part of the whole story for any problem requiring a decision to be made. Sometimes *it will be the least important information* available, as far as the decision maker is concerned. However, rare indeed is a decision made concerning a business that does not rely to some extent on accounting information.

## 35.7 The control of costs

**One of the most important features of cost accounting is its use for control purposes**, meaning, in this context, the *control of expenditure*. But control of expenditure is possible only if you can trace the costs down to the employees who are responsible for such costs. A convenient and frequently adopted approach to collecting costs is through **cost centres** – production or service locations, functions, activities, or items of equipment that can be identified as items which incur costs.

Costs are collected from cost centres for individual **cost units** – units of product or service. For example, in a manufacturing firm all direct materials, direct labour and direct expenses are traced to cost centres. (In this case, they may be known as ‘product centres’.)

A cost centre may be a single machine used for jobbing work, i.e. quite a lot of separate jobs performed specially to conform with the customer's specifications. It could be a group of similar machines or a production department. Thus, if a firm makes metal boxes on one machine, all the costs *incurred directly* relating to that machine (cost centre) would be gathered and then shared (allocated) among all the metal boxes (cost units) made by that machine.

Direct costs are easy to allocate in this way. However, so far as indirect costs are concerned, things can be far from simple. Indirect costs are, instead, traced to cost centres which give service (called 'service centres') rather than being concerned with work directly on the products. Examples of service centres include factory canteens and maintenance departments. The costs from these service centres are then apportioned to the product centres on an appropriate basis – for example, canteen costs may be allocated to product cost centres according to the number of employees working at each product cost centre.

In practice, there are a number of possible ways of attributing costs to cost centres. **What must not be lost sight of is the endeavour to trace costs to a person responsible for the expenditure so that the costs can be controlled. If that is to be done effectively, so that cost control is improved, any apportionment of indirect costs must be done carefully and must be done using a base that is acceptable to all those affected by its use.**

### 35.8 Costing: manufacturing firms compared with retailing or wholesale firms

It is quite wrong to think that costing is concerned only with manufacturing firms. Both textbooks and examination papers often give the impression that costing is only needed or found in manufacturing organisations. This is quite incorrect. **Costing is just as relevant to retailing and wholesaling firms and service industries as it is to those in manufacturing.** It is simply that manufacturing, which usually has more complex sorts of activities because of the manufacturing element, has attracted greater attention than other types of organisations. In addition, there are many other forms of organisations such as farming, shipping, banking and even charitable organisations where costing can aid management control. It would indeed be difficult to find any organisation which could not profitably use some form of costing system.

#### Learning outcomes

You should now have learnt:

- 1 Cost accounting is needed for there to be an effective management accounting system.
- 2 The benefits of operating a costing system should always outweigh the costs of operating it.
- 3 To be useful, information must be 'fit for purpose'.
- 4 When it is known what costs are for, and how much is to be spent on studying them, the appropriate method for measuring them can be decided.
- 5 In the case of a manufacturing company, classifying costs appropriately is necessary so that the overall production cost can be ascertained and so enable appropriate valuation of the closing stock of finished goods and of work in progress.

- 6 Accounting techniques themselves do not solve problems; people within the organisation are far more able to make sensible decisions about what should be done to aid the progress of the organisation towards its objectives when armed with the information that accounting techniques can provide.
- 7 Appropriate cost allocation is very important for control.
- 8 When costs are assigned to an individual cost centre, they are 'allocated'; when they are assigned to two or more cost centres, they are 'apportioned'.

## Answers to activities

**35.1** Very little. Financial accounting gathers data relating to current performance in ledger accounts and then summarises it in order to evaluate performance through the preparation of financial statements which convey historic performance information to stakeholders in the organisation and other interested parties. It has no involvement in forecasting and planning and no interest in future information. In addition, the evaluation of performance conducted by financial accounting is very different from that undertaken by management accounting.

**35.2** Useless data has cost time and money to collect, in itself a waste of resources. Secondly, it is often assumed to be useful and so misleads a decision maker into taking decisions that are completely inappropriate. Third, it clogs up the communication system within a business, so that other data is not acted on properly because of the general confusion that has been caused by the misleading data.

### 35.3 Cost

- 1 Raw materials for goods – identifiable with product made.
- 2 Rent of factory buildings.
- 3 Sales staff salaries.
- 4 Wages of machine operators in factory.
- 5 Wages of accounting machine operators in office.
- 6 Depreciation of lathes in factory.
- 7 Depreciation of typewriters in office.
- 8 Depreciation of fixtures in sales showrooms.
- 9 Supervisors' wages in factory.
- 10 Royalty paid for each item manufactured.
- 11 Works manager's salary: he reckons that he spends  $\frac{3}{4}$  of his time in the factory and  $\frac{1}{4}$  in general administration of the firm.
- 12 Raw materials incorporated in goods sold, but too difficult to trace to the goods being made.
- 13 Depreciation of motor vehicles used for delivery of finished goods to customers.
- 14 Interest on bank overdraft.
- 15 Wages of crane drivers in factory.
- 16 Discounts allowed.
- 17 Company secretary's salary.
- 18 Advertising.
- 19 Wages of staff of canteen used by factory staff only.
- 20 Cost of hiring special machinery for use in manufacturing one special item.

### Cost analysis

- 1 Direct materials
- 2 Indirect manufacturing costs
- 3 Selling and distribution
- 4 Direct labour
- 5 Administration expenses
- 6 Indirect manufacturing costs
- 7 Administration expenses
- 8 Selling and distribution expenses
- 9 Indirect manufacturing costs
- 10 Direct expenses
- 11  $\frac{3}{4}$  Factory indirect expenses  $\frac{1}{4}$  Administration expense
- 12 Indirect manufacturing costs
- 13 Selling and distribution expenses
- 14 Finance expenses
- 15 Indirect manufacturing costs
- 16 Finance expenses
- 17 Administration expenses
- 18 Selling and distribution expenses
- 19 Indirect manufacturing costs
- 20 Direct expenses

## Review questions

**35.1** Categorise each of the following costs into one of these six categories:

- (i) Direct materials
- (ii) Direct labour
- (iii) Indirect manufacturing costs
- (iv) Administration expenses
- (v) Selling and distribution expenses
- (vi) Finance expenses
  - (a) Wages for staff maintaining machines in factory
  - (b) Wages for staff maintaining accounting machinery
  - (c) Expenses of canteen run exclusively for factory workers
  - (d) Expenses of canteen run exclusively for administrative workers
  - (e) Grease used for factory machinery
  - (f) Cost of raw materials
  - (g) Carriage inwards on fuel used in factory boiler-house
  - (h) Carriage inwards on raw material
  - (i) Wages of managing director's chauffeur
  - (j) Wages of cleaners in factory
  - (k) Discounts allowed
  - (l) Rent of salesrooms
  - (m) Wages of lathe operators in factory
  - (n) Wages of security guards; the area of the factory buildings is four times as great as the other buildings
  - (o) Debenture interest
  - (p) Rent of annexe used by accounting staff
  - (q) Managing director's remuneration
  - (r) Sales staff salaries
  - (s) Running costs of sales staff cars
  - (t) Repairs to factory buildings
  - (u) Audit fees
  - (v) Power for machines in factory
  - (w) Business rates:  $\frac{3}{4}$  for factory buildings and  $\frac{1}{4}$  for other buildings
  - (x) Rent of internal telephone system in factory
  - (y) Bank charges
  - (z) Costs of advertising products on television.

**35.2A** Categorise each of the following costs into one of these six categories:

- (i) Direct materials
- (ii) Direct labour
- (iii) Indirect manufacturing costs
- (iv) Administration expenses
- (v) Selling and distribution expenses
- (vi) Finance expenses
  - (a) Interest on bank overdraft
  - (b) Factory storekeepers' wages
  - (c) Hire of Rolls-Royce for managing director's use
  - (d) Repairs to factory roof
  - (e) Hotel bills incurred by sales staff
  - (f) Motor tax for vans used for delivering goods to customers
  - (g) Chief accountant's salary
  - (h) Lubricants for factory machinery
  - (i) Cost of disks for firm's computer

- (j) Helicopter hire charges re special demonstration of company's products
- (k) Debt collection costs
- (l) Costs of painting advertising signs on London buses
- (m) Cost of airplane tickets for sales staff
- (n) Wages of painters engaged in production
- (o) Wages of timekeepers in factory
- (p) Postal charges for letters
- (q) Wages of office boy in general office
- (r) Postal charges – parcels sent to customers
- (s) Repairs to vans used for taking goods to customers
- (t) Cost of raw materials included in product
- (u) Wages for cleaners engaged in administration block
- (v) Carriage inwards on raw materials
- (w) Repairs to neon sign in Piccadilly Circus
- (x) Advertising agency fees
- (y) Wages of crane drivers in factory
- (z) Power costs of accounting machinery.

### 35.3 From the following information, calculate:

- (a) Prime cost
- (b) Production cost
- (c) Total cost.

	£	£
Wages and salaries of employees:		
In factory (70 per cent is directly concerned with units being manufactured)		220,000
Salaries: Sales staff		8,000
Commission on sales paid to sales staff		1,400
Salaries of administrative staff		72,000
Travelling expenses:		
Sales staff	2,900	
Factory workers not directly concerned with production	100	
Administrative staff	<u>200</u>	
		3,200
Haulage costs on raw material bought		4,000
Carriage costs on goods sold		7,800
Depreciation:		
Factory machinery	38,000	
Accounting and office machinery	<u>2,000</u>	
Motor vehicles:		
Sales staff cars	3,800	
Administrative staff	1,600	
Sales display equipment	<u>300</u>	
		45,700
Royalties payable per unit of production		1,600
Canteen costs used by all the workers, $\frac{2}{3}$ work in the factory, $\frac{1}{3}$ in other parts of the firm		6,000
Raw materials:		
Stock at start of period		120,000
Stock at close of period		160,000
Bought in the period		400,000
Interest on loans and overdrafts		3,800
Other indirect manufacturing costs		58,000
Other administrative expenses		42,000
Other selling expenses		65,000







### 35.4A From the following information work out:

- Prime cost
- Production cost
- Total cost.

Wages and salaries of employees:	£	£
In factory (60 per cent is directly concerned with units being manufactured)		150,000
In salesforce		15,000
In administration		26,000
Carriage costs:		
On raw materials brought into the firm		1,800
On finished goods delivered to customers		1,100
Rent and rates:		
Of factory block	4,900	
Of sales department and showrooms	1,000	
Of administrative block	<u>1,100</u>	
		7,000
Travelling expenses:		
Sales staff	3,400	
Administrative staff	300	
Factory workers not connected directly with production	<u>200</u>	
		3,900
Raw materials:		
Stock at start of period		11,400
Bought in the period		209,000
Stock at close of the period		<u>15,600</u>
Royalties: payable per unit of production		400
Depreciation:		
Sales staff cars	500	
Vehicles used for deliveries to customers	300	
Cars of administrative staff	400	
Machinery in factory	1,800	
Office machinery	<u>200</u>	
		3,200
Interest costs on borrowed money		800
Other indirect manufacturing costs		6,000
Other administrative expenses		4,000
Other selling expenses		<u>1,000</u>

### 35.5A

- The terms *cost behaviour* and *analysis of total cost* are regularly used in cost accounting to classify costs. Distinguish between the two terms.
- Explain how the following costs will:
  - behave;
  - be analysed.
    - Factory power and lighting
    - Production line workers' wages
    - Sales manager's salary
    - Office rent.

(Edexcel: GCE A-level)

# Absorption and marginal costing

## Learning objectives

After you have studied this chapter, you should be able to:

- explain why the costs relevant for decision making are often different from those used for the calculation of net profit
- explain the difference between fixed, variable, semi-variable, and step-variable costs
- explain the difference between absorption and marginal costing
- discuss various factors underlying the pricing policy adopted by an organisation
- explain why marginal costing, not absorption costing, should be used when deciding how to utilise spare capacity through additional production
- explain what is meant by 'full cost pricing'
- explain the importance of contribution to pricing, production, and selling decisions
- explain what is meant by activity-based costing (ABC)
- discuss the advantages and limitations of ABC

## Introduction

In this chapter, you'll learn more about the nature of different types of costs, including fixed, variable and semi-variable costs. You will also learn how to arrive at a cost per unit that can then be used to set an appropriate selling price for a good or service. Two contrasting approaches – absorption (or 'full') costing and marginal costing – are reviewed; and the concept of **contribution** is introduced and its importance in pricing and production decisions is explored. Finally, you will learn about another approach to cost attribution: activity-based costing.

### 36.1 Allocation of indirect manufacturing costs

As you learnt in the previous chapter, all indirect manufacturing costs are allocated to the products manufactured. Indirect manufacturing costs, therefore, add to the value of work in progress and, so, to the value of finished goods stock. After apportioning all indirect manufacturing costs to the products produced, the production cost of any item comprises direct materials, direct labour, any direct expenses, plus a share of indirect manufacturing costs.

After a financial period has ended, it is possible to look back and accurately calculate the indirect costs. It is this figure that is used when calculating the valuation of closing stock. Consider a company which had produced 1,000 units, of which 200 units have not yet been sold, at a total production cost of £100,000. The closing stock valuation becomes:

$$\frac{\text{Unsold units}}{\text{Total units produced}} \times \text{Production cost of goods completed} = \frac{200}{1,000} \times £100,000$$

$$= £20,000 \text{ closing stock valuation}$$

The method we have just used above, which includes allocating all indirect manufacturing costs to products, is known as '**absorption costing**', sometimes called 'full costing'. While you proceed through the rest of this chapter, try to decide for yourself whether or not it would always be appropriate to use absorption costing in order to determine the cost of something produced (a good) or provided (a service).

## 36.2 Absorption costing: effect upon future action

Let's consider a decision you may have to make concerning a future action. Exhibit 36.1 concerns a decision about whether or not to take on an extra order, something that arises from time to time in all forms of business.

### Exhibit 36.1

Donald Ltd's factory has been making 100,000 units annually of a particular product for the past few years. Last year, costs were:

	£
Direct labour	200,000
Direct materials	300,000
Indirect manufacturing costs	<u>400,000</u>
Production cost	900,000
Administration and other expenses	<u>150,000</u>
	<u>1,050,000</u>

The 100,000 units were sold for £12 each = £1,200,000

The production cost per unit can be seen to be  $\frac{£900,000}{100,000} = £9$

The current year is following exactly the same pattern of production and costs. Suddenly, part-way through the year, a foreign buyer sends a request for 20,000 units if the price per unit can be cut from £12 to £8. A meeting is held and the managing director says, 'What a pity. This could have been our first export order, something we have been waiting to happen for several years. The selling price overseas has no bearing on our selling price at home. But it costs us £9 to produce a unit, so we would lose £1 per unit if we accepted this order. We just cannot afford to lose money in order to achieve some export sales. Our shareholders would not tolerate the annual profit of the company falling below £150,000.'

'I think you're wrong,' says John, the accountant. 'Let's look at this year's results (a) if we do not accept the order and (b) if the order is accepted':

	(a) Order not taken		(b) Order taken	
	£	£	£	£
Sales $100,000 \times £12$		1,200,000		
$100,000 \times £12 + 20,000 \times £8$				1,360,000
Less Expenses:				
Direct labour	200,000		240,000	
Direct materials	300,000		360,000	
Indirect manufacturing costs	400,000		420,000	
Other expenses	<u>150,000</u>		<u>150,000</u>	
		(1,050,000)		(1,170,000)
Net profit		<u>150,000</u>		<u>190,000</u>

'More profit. This means that we take the order,' says the sales director enthusiastically.

'Surely you've got your figures wrong, John,' says the managing director. 'Check your arithmetic.'

'There's nothing wrong with my arithmetic,' says John; 'all I've done is to illustrate the benefits of using a different approach to product costing in these circumstances compared to the one we use when valuing our stock. It is known as 'marginal costing'. Perhaps it will be a little clearer if I add some more details:

	(a) Order not taken		(b) Order taken	
	£	£	£	£
Sales				
Less Costs which vary with production:		1,200,000		1,360,000
<i>Direct labour.</i> The workers are on piece-work (i.e. they are paid according to how much they produce. In this case, this means 20 per cent more production brings 20 per cent more wages (i.e. £200,000 for 100,000 units; £240,000 for 120,000 units)	200,000		240,000	
<i>Direct materials.</i> 20 per cent greater production gives 20 per cent more materials (£300,000 + £60,000)	300,000		360,000	
<i>Indirect manufacturing costs:</i> Some would not change at all, e.g. factory rent, factory rates. Some would alter, e.g. cost of electric power because machines are used more. Of the indirect manufacturing costs, one-quarter is variable. For this variable part, £100,000 costs for 100,000 units becomes £120,000 costs for 120,000 units.	<u>100,000</u>		<u>120,000</u>	
Marginal cost		(600,000)		(720,000)
Sales				
Less Variable costs		600,000		640,000
Fixed costs (i.e. costs which will not alter at all if 20,000 more units are produced):				
Indirect manufacturing costs; fixed part	300,000		300,000	
Administration and other expenses	<u>150,000</u>		<u>150,000</u>	
		(450,000)		(450,000)
Net profit		<u>150,000</u>		<u>190,000</u>

'We can do all this without borrowing any money,' says the managing director, 'so I'll phone now to tell them we will start production immediately. By the way, John, come to my office this afternoon and tell me more about variable and fixed costs.'

### 36.3 The lesson to be learnt

We must not get lost in the technicalities of accounting. It is easy to think that calculations which look complicated must give the right answer. Logic must be brought to bear on such problems. This last example shows that **the costs needed when making decisions about the future will often be different from those which were used for calculating profit earned in the past**. In the example, £9 per unit had been used for stock valuation, but this example demonstrates how an organisation can manufacture units and sell them for less than their cost, as calculated using absorption costing, and still increase its profit. The reason for this is the very essence of the differences between fixed and variable costs which we will now consider.

### 36.4 Fixed and variable costs

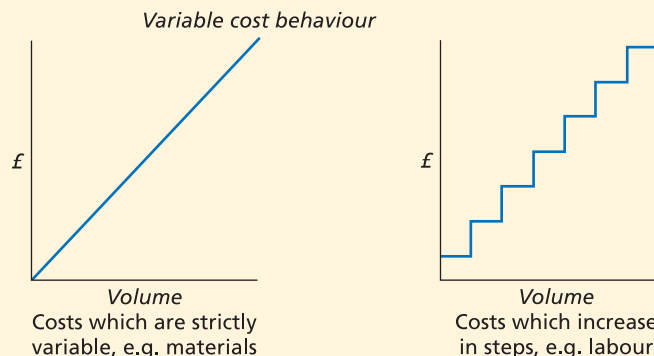
The division of costs into those that are fixed and those that are variable is not always straightforward. Even something often assumed to be a fixed cost, such as factory rent, is not always 'fixed'. For example, if production had to be increased above a certain figure, the business might have to rent additional premises. Such a change would not usually happen in the short term: it would take a while to rent and set up a new factory or extra premises before production could start. **When fixed costs are mentioned it is normally assumed that this means costs which are fixed in the short term.**

In the Donald Ltd example, it was assumed that variable costs were 100 per cent variable. That is, if production rose 20 per cent then the cost would rise 20 per cent; if the production rose 47 per cent then the cost would also rise 47 per cent. This is not necessarily true. The cost of power may rise 20 per cent if production rose 20 per cent, but the cost of repairing and maintaining the machines may rise by only 10 per cent if production rose 20 per cent. In this case, the machine maintenance would be a 'semi-variable cost', this being the term for a cost which varies with changes in the level of production, but not at the same rate as the changes in the level of production.

### 36.5 Cost behaviour

Appropriate cost planning and control is dependent on possessing sound knowledge of how individual costs behave under certain conditions. In particular, how costs behave in the organisation

#### Exhibit 36.2



in question. There is no substitute for experience when it comes to understanding cost behaviour. As a result, accountants often require the assistance of specialists in other aspects of the business when endeavouring to understand the nature of cost behaviour.

Raw materials are an example of a variable cost which normally varies *in total* in strict proportion to the units manufactured. Labour costs, on the other hand, usually move in steps, thus the term 'step-variable' cost. For instance, a job may be done by two people, and then a slight increase in production activity means that the two people cannot manage it so that a third person is added. In fact, the increase in production activity may only represent  $2\frac{1}{3}$  people's work, but **the acquisition of workers comes in indivisible chunks**. There can still be a further increase in activity without any more workers, but then the time will come when a fourth person is needed. This is illustrated in the two graphs in Exhibit 36.2.

## 36.6 Marginal costing and absorption costing contrasted

Where costing is used which takes account of the variable cost of products rather than the full production cost, this is known as '**marginal costing**'. We have seen that a marginal costing approach to the decision whether or not to accept the foreign order by Donald Ltd gave an answer which increased the firm's profitability, whereas blindly using absorption costing of £9 a unit would have meant the order being rejected and the opportunity presented to increase profits and break into the foreign market being lost.

Let's look now at what would happen to gross profit if we used either marginal costing or absorption costing for a whole organisation.

### Exhibit 36.3

The calculations of the annual gross profit of Burke Ltd are shown drafted as if (A) marginal costing had been used, and (B) absorption costing had been used. The following information is available:

- 1 Fixed manufacturing costs amounted to £400,000 per annum.
- 2 Variable overheads amounted to £2 per unit.
- 3 Direct labour and direct materials total £3 per unit.
- 4 Sales remain constant at 100,000 units per annum at £13 per unit.
- 5 Production in year 1 is 120,000 units, year 2 is 150,000 units and year 3 is 90,000 units.

Year 1	(A) Marginal costing		(B) Absorption costing	
	£	£	£	£
Sales		1,300,000		1,300,000
Less Variable costs:				
Direct labour and material: 120,000 × £3	360,000		360,000	
Variable overheads: 120,000 × £2	<u>240,000</u>		<u>240,000</u>	
Total variable cost	600,000			
Less in (A) Valuation of closing stock				
20,000				
× £600,000	(100,000)*			
120,000				
Marginal cost of goods sold	<u>500,000</u>			
Fixed manufacturing costs	<u>400,000</u>		400,000	
		(900,000)		
Total production costs			<u>1,000,000</u>	
Less in (B) Valuation of closing stock				
20,000				
× £1,000,000			( 166,667)*	
120,000				
Gross profit		<u><u>400,000</u></u>		<u><u>(833,333)</u></u>
				<u><u>466,667</u></u>





Year 2	(A) Marginal costing	(B) Absorption costing
	£	£
Sales	1,300,000	1,300,000
Less Variable costs:		
Direct labour and material 150,000 × £3	450,000	450,000
Variable overheads, 150,000 × £2	300,000	300,000
Total variable cost	750,000	
Add in (A) Opening stock b/d	100,000	
	850,000	
Less in (A) Closing stock		
70,000 × £750,000	(350,000)*	
150,000		
Marginal cost of goods sold	500,000	
Fixed manufacturing costs	400,000	400,000
	( 900,000)	
Total production costs		1,150,000
Add opening stock in (B) b/d		166,667
		1,316,667
Less Closing stock in (B)		
70,000 × £1,150,000		( 536,667)*
150,000		
Gross profit	400,000	( 780,000)
		520,000
Year 3	(A) Marginal costing	(B) Absorption costing
	£	£
Sales	1,300,000	1,300,000
Less Variable costs:		
Direct labour and material, 90,000 × £3	270,000	270,000
Variable overheads, 90,000 × £2	180,000	180,000
Total variable cost	450,000	
Add in (A) Opening stock b/d	350,000	
	800,000	
Less in (A) Closing stock $\frac{60,000}{90,000} \times £450,000$	(300,000)*	
Marginal cost of goods sold	500,000	
Fixed manufacturing costs	400,000	400,000
	( 900,000)	
Add in (B) Opening stock b/d		850,000
		536,667
		1,386,667
Less in (B) Closing stock $\frac{60,000}{90,000} \times 850,000$		566,667*
		( 820,000)
Gross profit	400,000	480,000

**\*Note:**

The closing stock each year for (A) is made up of:

$$\frac{\text{Unsold units}}{\text{Number of units produced in year}} \times \text{Total variable cost of that year}$$

Units produced year 1 120,000 – 100,000 = Closing stock 20,000 units

Units produced year 2 150,000 + 20,000 opening stock – sales 100,000 = Closing stock 70,000 units

Units produced year 3 90,000 + 70,000 opening stock – sales 100,000 = Closing stock 60,000 units

So in year 1 unsold units are 20,000 units; units produced 120,000; total variable cost is £600,000; therefore stock valuation is:

$$\frac{20,000}{120,000} \times £600,000 = £100,000$$

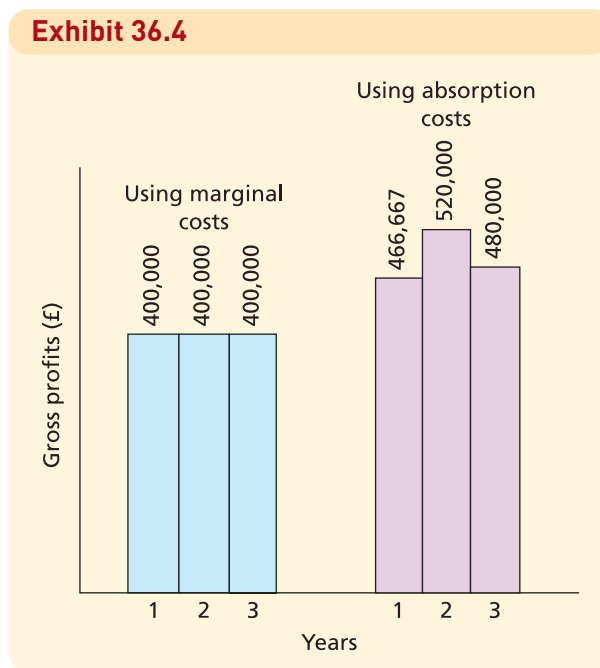
and the cost per unit is £5.

The closing stock each year for (B) is made up of:

$$\frac{\text{Unsold units}}{\text{Number of units produced in year}} \times \text{Total production cost of that year}$$

So in year 1 stock valuation becomes  $\frac{20,000}{120,000} \times £1,000,000 = £166,667$  and the cost per unit is £8.33.

Exhibit 36.4 shows in diagrammatic form the reported gross profits shown in Exhibit 36.3.



You can see from the note that if 'cost' is used to set selling prices, under absorption costing, selling prices would be much higher than under marginal costing.

### 36.7

## Comparison of reported profits – constant sales and uneven production

Exhibits 36.3 and 36.4 have illustrated that Burke Ltd, a business which had the same volume of sales each year at the same prices, and the same variable cost per unit, shows quite different gross profit figures using marginal costing compared with the gross profits under absorption costing. As these were the gross profits that were calculated let us assume that the selling, distribution, administration and finance expenses were £100,000 for each of these years. The net profits would therefore be as follows:



	(A) <i>Marginal costing</i>	(B) <i>Absorption costing</i>
	£	£
Year 1	300,000	366,667
Year 2	300,000	420,000
Year 3	300,000	380,000

Under absorption costing, Year 2 shows the biggest profit. As sales etc. are the same, only production being different, this means that the year which has the greatest closing stock has shown the greatest profit. Because of greater production, the amount of fixed factory manufacturing cost per unit is less. For instance, in Year 1 with 120,000 units produced and £400,000 fixed manufacturing costs this means fixed manufacturing costs in Year 1 are £3.33 per unit:

$$\frac{£400,000}{120,000} = £3.33 \text{ per unit; Year 2 } \frac{£400,000}{150,000} = £2.67 \text{ per unit; Year 3 } \frac{£400,000}{90,000} = £4.44$$

Under absorption costing, the value of closing stock includes the fixed indirect manufacturing costs and less gets charged per unit for fixed indirect manufacturing costs when production increases, and vice versa. Also, as shown in Exhibits 36.3 and 36.4, a greater gross profit is shown under absorption costing than under marginal costing.

Of course, the situation gets more complicated because the closing stock of one year is the opening stock of the next year and, under absorption costing, the value of each unit of stock will vary from one year to the next. For example, in Year 3, the opening stock of 70,000 units is shown as £536,667 = £7.67 per unit; the value of the closing stock of 60,000 units is shown as £566,667 = £9.44 per unit. Yet these units are of exactly the same product and costs have been kept the same each year. **This type of change in unit value can be confusing and showing a higher profit in a year when the closing stock is higher than usual can give a false sense of security.**

### Activity 36.1

Why?

Many experts have argued for or against each of these approaches – marginal and absorption – in the context of profit calculation. The marginal approach assumes that fixed manufacturing costs are a function of time and should not be carried forward to the next period in stock valuations. The absorption approach assumes that such overhead is concerned with production and, therefore, that the goods produced in that year but not yet sold should include the expense in the calculation of their value carried forward to the next period.

Do such costs ‘attach’ to the product or to time? They attach to time. Consequently, it does seem that the marginal approach is more appropriate for closing stock valuation.

Of course, **during the life of a business, the recorded profits of a firm will be the same in total whichever method is in use.** If Burke Ltd exists for 20 years before it closes down, the profits as calculated for each year using the different methods will result in different recorded profits year by year (except by coincidence). The total profit during the complete life of the business of (say) £20 million will be the same. However, the intermediate reporting of profits may induce decisions which change the pattern of activities and, therefore, affect the future profitability of the business. Use of an inappropriate basis for calculating profits can lead to inappropriate decisions being made.

## 36.8 Pricing policy

One thing is clear: **in the long term, revenues must exceed costs or else the entity will fail and go out of business.** If it was a company, it would have to be liquidated. If it was a business run by a

sole trader, she could be declared bankrupt. On the other hand, businesses may find that, in the short term, costs sometimes exceed revenues. In other words, the business makes a net loss. Many do make losses from time to time without being forced out of business because, in other periods, they make sufficient profits to offset those losses.

This being so, the way in which prices are determined for the goods or services sold by a business is of great importance. You may well expect that there are some definite rules which will be observed by a business when it fixes its prices, and that these rules are followed by all businesses. Your expectations would, however, be quite wrong.

With pricing, each business is unique. That is, each business has certain features that do not apply to other businesses. These differences affect pricing policy. For instance, let's look at the price of sugar sold by three different businesses. The first (A) is a grocer's shop in a village, it is the only grocer's shop, and the next shop at which the villagers can buy sugar is thirty miles away. The second (B) is a grocer's shop in a town where there are plenty of other shops selling sugar. The third (C) is a very large supermarket in a city, in a street where there are other large supermarkets. For a bag of sugar, you have to pay at (A) 90p; (B) 80p; (C) 60p. The sugar is of exactly the same quality and is manufactured by the same company. (A) buys in small quantities; consequently it pays a higher price than (B) or (C) for its sugar, but it knows that none of its customers want to go thirty miles for sugar. The owner does not want to lose self-respect by overcharging anyway, so he settles for 90p. He always reflects that if he charged more, his customers might decide to buy sugar in larger quantities when they went to the nearest town to shop. (B) makes hardly any profit at all out of its sugar sales. It fears that if its regular customers were to go elsewhere for their sugar they might well decide to buy other things as well, resulting in (B) losing not only its sugar sales but also a great deal of its other sales as well. (C) sells sugar at a loss – it does this quite deliberately to tempt customers who come to buy cheap sugar, and then buy other items on which the supermarket makes reasonable profits.

If there can be such differences in the selling price of a bag of sugar when sold by three different businesses, none of which had, in fact, produced the sugar, then how much more complex is the position where businesses manufacture goods and then each have to decide the prices to sell them at? This is where a study of economics helps to get this in better perspective. Along with other economic factors, the elasticity of demand (i.e. the impact upon demand of a change in price) must be considered as well as whether or not the business has a dominant position in the market. Knowledge of economics provides a framework for your thinking but it is not the purpose of this book to be an economics text. Nevertheless, pricing relies on economic analysis as much as on information about costs. We will content ourselves with accepting that this is so, and will focus upon how accounting information impacts upon pricing.

## 36.9 Full cost pricing

Although there may be no clearly defined rules on pricing, it can at least be said that views of pricing can be traced to one of two attitudes. These are:

- 1 Ascertain the cost of the product and then add something to that for profit, the sum being the selling price. This is usually known as **full cost pricing**.
- 2 Ascertain the price at which similar products are selling, and then attempt to keep costs below that level so as to make an acceptable profit.

Many of the problems connected with full cost pricing are the same as those that arise with absorption costing and marginal costing.

### Activity 36.2

What are these problems of absorption costing and marginal costing?

Despite the inflexibility of the approach, many businesses use the full cost basis to price their goods and services, very probably because it is easy to apply and guarantees an acceptable profit on each unit of product or service that it manages to sell; and is easy to explain, justify, and understand. This is not meant as a criticism – after all, the accounting process it requires is the simplest one available. There is no advantage to be gained by using complicated methods when simple ones will meet the needs of the end users of the accounting information.

The more complicated the costing (and thus pricing) approach adopted, the greater will be the costs of creating it and of maintaining it. If the benefits to be obtained from a complex approach do not exceed the costs of the additional complexity in the approach, a simpler, more cost-effective approach should be adopted. On the other hand, using a simple approach because it is simple and, therefore, cheap to operate, can be extremely costly in the long run if the information it produces and provides is less accurate than is required for effective decision making. Both these aspects need to be considered when selecting the accounting approach to adopt.

The information shown in Exhibit 36.5 has been drawn up on a full cost basis. Full cost pricing finds the cost of direct materials and direct labour and then adds relevant amounts to represent indirect manufacturing costs, selling, admin and finance expenses, and profit. The selling price is calculated as follows:

### Exhibit 36.5

	£
Cost of direct materials and direct labour	10
Add Variable manufacturing costs	5
Add Share of fixed manufacturing costs	1
Absorption cost	16
Add Percentage (50 per cent in this case) for selling, administration and finance expenses	8
Full cost	24
Add Percentage for profit (in this case, 25 per cent)	6
Selling price	<u>30</u>

The 50 per cent for selling, administration and finance costs is probably based on the figures for the previous year, when, as a total for the year, they would have approximated to 50 per cent of the total of direct materials + direct labour + variable manufacturing costs + fixed manufacturing costs (i.e. in this case it would have amounted to £16 for one unit). Therefore, taking 50 per cent of that figure (£8) as an addition is really saying that it is assumed that the pattern of costs incurred is similar to that of the previous year.

Remember that this was just an example of how full cost pricing may be applied. In other situations and even in the same situation but in another business, differences in the way the figures used are found will be commonplace. As you have already seen earlier in this book, the allocation of fixed costs is very arbitrary, yet when full cost pricing is adopted, the selling price is based upon figures produced as a direct consequence of such arbitrary allocation. Unsurprisingly, sometimes the price arrived at turns out to have been incorrect.

## 36.10 Example of full cost pricing

In Exhibit 36.6, three businesses are making identical products. For the purpose of illustration, we will assume that the variable and fixed costs for each of them are the same. Different accountants use different methods of allocating fixed costs between products even though, in each case, the allocation may seem to be quite rational. **There is usually no one 'right' way of allocating fixed costs.** Instead, there are 'possible' ways. In this exhibit, each of them manufactures two products and, because of the different ways in which they have allocated fixed costs, they have each come up with different selling prices for their products.

**Exhibit 36.6**

	<i>Blue Ltd Products</i>		<i>Green Ltd Products</i>		<i>Red Ltd Products</i>	
	A	B	A	B	A	B
	£	£	£	£	£	£
Direct labour and materials	10	12	10	12	10	12
Variable manufacturing costs	<u>16</u>	<u>10</u>	<u>16</u>	<u>10</u>	<u>16</u>	<u>10</u>
Marginal cost	26	22	26	22	26	22
Fixed manufacturing costs	<u>6</u>	<u>26</u>	<u>22</u>	<u>10</u>	<u>14</u>	<u>18</u>
Full cost	32	48	48	32	40	40
Add Profit: 12.5 per cent of full cost	<u>4</u>	<u>6</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>5</u>
	<u>36</u>	<u>54</u>	<u>54</u>	<u>36</u>	<u>45</u>	<u>45</u>

In real life, once selling prices have been calculated the market prices of similar goods are looked at, and the price is arrived at after taking account of what competitors are charging. In this case, the prices set by Red Ltd might well have been the result of its having calculated the average market price as given by finding the average of the prices set by Blue Ltd and Green Ltd.

Suppose Blue Ltd and Green Ltd placed their faith in their full cost pricing-based selling prices but now realise they also need to set their selling prices at £45. Blue might think that as the full cost of product B is £48, it would lose £3 for every unit sold of product B. Green Ltd might, on the other hand, think that as the full cost of product A is £48, it would lose £3 on every unit sold of product A. If they rigidly apply full cost pricing, Blue Ltd might decide to cease production of B, and Green Ltd decide to cease production of A. This is unlikely to be a wise decision for either company.

If the plans had been for each company to sell 100 of each of products A and B, then the plans have now altered to Blue Ltd producing and selling 100 of A only, Green Ltd producing and selling 100 of B only, and Red Ltd producing and selling 100 of A and 100 of B. The summarised profit and loss accounts of the three companies will now be as shown in Exhibit 36.7.

**Exhibit 36.7**

	<i>Blue Ltd</i>	<i>Green Ltd</i>	<i>Red Ltd</i>
	£	£	£
Sales: 100 of A @ £45	4,500		4,500
100 of B @ £45		<u>4,500</u>	<u>4,500</u>
Total revenue	<u>4,500</u>	<u>4,500</u>	<u>9,000</u>
Less Costs: Direct labour and materials			
Product A 100 × £10	1,000		1,000
Product B 100 × £12		1,200	1,200
Variable manufacturing costs			
Product A 100 × £16	1,600		1,600
Product B 100 × £10		1,000	1,000
Fixed manufacturing costs: does not change as a consequence of cessation of production in Blue Ltd and Green Ltd as it is a fixed cost.	<u>3,200</u>	<u>3,200</u>	<u>3,200</u>
Total costs	<u>(5,800)</u>	<u>(5,400)</u>	<u>(8,000)</u>
Net profit			<u>1,000</u>
Net loss	<u>(1,300)</u>	<u>( 900)</u>	

Exhibit 36.7 shows that Blue Ltd and Green Ltd would incur losses if they ceased production of product B and product A respectively. Yet, if they had not ceased production they would both have made profits of £1,000 (as Red Ltd has done). After all, they are *similar* organisations with *exactly* the same costs – the only difference was the way they allocated fixed costs. The fixed costs in each company totalled £3,200. Blue allocated this between products as A £6, B £26. Green allocated it A £22, B £2. Red allocated it A £14, B £18. With 100 units of each product being produced, this amounted to an allocation overall apportionment of fixed costs of £3,200 by each company. **Fixed overhead does not change just because of ceasing production of one type of product.** The factory rent and rates will remain the same, as will the secretaries' salaries and other fixed costs.

## 36.11 Contribution

The question arises therefore as to **which costing approach, absorption costing or marginal costing, is more appropriate when deciding whether or not to continue manufacturing a product or providing a service. The answer to this is that it is the marginal cost – i.e. the variable cost – which is relevant and so should be used.** If marginal cost is *less* than selling price, the difference will make a **contribution** towards fixed costs, thus reducing the burden of the fixed costs on the other products.

This can be seen in the following example concerning which of the two products we introduced in Section 36.10, A and B, to make when there is some spare production capacity. **Remember, as absorption costing includes an element of fixed cost, it is not appropriate to use it when considering decisions of this type:**

### Exhibit 36.8

	Product A	Product B
	£	£
Selling price	45	45
Less Marginal cost	(26)	(22)
Contribution towards fixed costs and profit	<u>19</u>	<u>23</u>

Either product could be usefully considered, both make a positive contribution towards fixed costs. However, all other things being equal, product B appears to be the better option. Thus, if there is spare capacity, and an opportunity arises to use some of it, marginal costing can be used in order to determine whether the projected income arising from 'extra' sales exceeds the marginal cost of the 'extra' items produced. If it does, it is worthwhile considering taking on the work. This is based on an important rule:

$$\text{Contribution} = \text{Selling Price} - \text{Variable Cost}$$

Contribution is also the basis of another important rule for decision making:

$$\text{Break-even point} = \frac{\text{Fixed costs}}{\text{Selling price per unit} - \text{Variable cost per unit}}$$

Break-even point is the volume of sales required in order to make neither a profit nor a loss.

**See Chapter 44 to learn more about these rules when you will look at break-even analysis (also called cost–volume–profit analysis).**

**Note:** Marginal costing uses variable costs. The variable cost is often referred to as the marginal cost. They are, effectively, the same thing.

## 36.12 Using marginal costs

Let's test what you're just learnt in another example. A company produces five products and has the following cost and sales data. It can sell exactly 100 of each product it manufactures. Total fixed costs are £4,800, apportioned: A £5 (100), B £7 (100), C £11 (100), D £15 (100), E £10 (100), i.e. £4,800 total. Exhibit 36.9 presents this in a table.

**Exhibit 36.9**

Violet Ltd	Products				
	A	B	C	D	E
Cost per unit:	£	£	£	£	£
Direct labour and materials	8	9	16	25	11
Variable manufacturing costs	<u>7</u>	<u>8</u>	<u>10</u>	<u>13</u>	<u>14</u>
Marginal cost	15	17	26	38	25
Fixed costs	<u>5</u>	<u>7</u>	<u>11</u>	<u>15</u>	<u>10</u>
Full cost	<u>20</u>	<u>24</u>	<u>37</u>	<u>53</u>	<u>35</u>
Selling price per unit	<u>30</u>	<u>21</u>	<u>31</u>	<u>80</u>	<u>20</u>

On the full cost basis, only A and D appear to be profitable. Should production of B, C and E be discontinued? You know that production should cease only when the selling price is less than marginal cost. In Exhibit 36.10, you can see if following this brings more profit than following the result of the full cost calculation. You can also see what would have happened if production levels of all products continued as before.

**Exhibit 36.10**

	(1) Following full-cost pricing, cease producing B, C and E	(2) Using marginal costing, cease producing E only	(3) Ignore costing altogether and produce all items
Sales: A 100 × £30	£ 3,000	£ 3,000	£ 3,000
B 100 × £21		2,100	2,100
C 100 × £31		3,100	3,100
D 100 × £80	8,000	8,000	8,000
E 100 × £20			<u>2,000</u>
Total revenue	<u>11,000</u>	<u>16,200</u>	<u>18,200</u>
Less Costs:			
Direct labour and materials:			
100 × cost per product	(£33) 3,300	(£58) 5,800	(£69) 6,900
Variable manufacturing costs:	(£20) 2,000	(£38) 3,800	(£52) 5,200
100 × cost per product			
Fixed costs (do not change)	<u>4,800</u>	<u>4,800</u>	<u>4,800</u>
Total costs	<u>(10,100)</u>	<u>(14,400)</u>	<u>(16,900)</u>
Net profit	<u>900</u>	<u>1,800</u>	<u>1,300</u>

The £s figures in brackets show the cost of each product, e.g. in (1) the direct labour and materials are A £8 + D £25 = £33.

As you can see from Exhibit 36.10, it would be just as well if we followed our own advice. This would give a profit of £1,800 compared with £900 using the full cost approach or £1,300 if we disregarded costing altogether. Sometimes the full cost approach will give far better results than ignoring costing altogether, but this case shows that **using an inappropriate costing base can be even worse than having no costing system at all**. Marginal costing always gives the most appropriate answer in this sort of situation.

**There is, however, a danger in thinking that if the marginal cost of each product is less than the selling price then all products produced will be profitable. This is not the case**, and full consideration must be given to the fact that the *total* contribution from all the products *must* exceed the fixed costs, otherwise there will be an overall loss. Different volumes of activity on each product will also affect this. Exhibit 36.11 looks at a two-product firm making products A and B at different volumes of activity. Product A has a marginal cost of £10 and a selling price of £14. Product B has a marginal cost of £6 and a selling price of £8. Fixed costs are £1,400.

### Exhibit 36.11

	Profit, or loss, at different volumes of activity							
	A	B	A	B	A	B	A	B
Units sold	100	100	200	200	300	300	400	400
	£	£	£	£	£	£	£	£
Contribution (Selling price less Marginal cost) A £4 per unit, B £2 per unit	400	200	800	400	1,200	600	1,600	800
Total contributions	600		1,200		1,800		2,400	
Fixed costs	(1,400)		(1,400)		(1,400)		(1,400)	
Net loss	<u>( 800)</u>		<u>( 200)</u>					
Net profit					<u>400</u>		<u>1,000</u>	

Here the selling price always exceeds marginal cost, but if activity is low the firm will incur a loss. This is shown where activity is only 100 or 200 units of each product.

To summarise, the main lessons to be learned about selling prices are:

- a product should make a positive contribution (unless there is some overriding matter which makes the product a viable loss-leader, as in the case of the supermarket's sugar price in Section 36.8). That is, selling prices should exceed marginal costs; and
- the volume of sales should be sufficient so that, in the long term (it may be different in the short term) the fixed costs are less than the total of the contributions from all the products.

## 36.13 Maximisation of total contribution

**It is the maximisation of the total contribution from a product that is important.** Because of this, the volumes of activity cannot be ignored. Suppose, for instance, that a company could only manufacture two products in future whereas, to date, it had manufactured three. It may be that per unit the contribution may well have been (A) £10, (B) £8 and (C) £6. If a decision was made on



this basis only then (C) would be discontinued. However, if the volumes were (A) 20, (B) 15 and (C) 30, the total contributions would be (A)  $20 \times £10 = £200$ ; (B)  $15 \times £8 = £120$ ; (C)  $30 \times £6 = £180$ . As (B) has the lowest *total* contribution it should be (B) that is discontinued, not (C).

**Where there is a limit of one of the items used in production of the product, the contribution per product per unit of that limiting factor (or 'key factor') should be used as the basis for the decision taken. (Note: this topic appears frequently in examinations.)**

Take, for example, a situation where there are 200 spare hours of machine capacity available and a decision has to be made concerning which, if any, of its products should have their production levels increased. The contribution per machine hour of each product is: A £2; B £3; C £5; D £1. Based on this information, more of product C should be produced. It will generate the greatest amount of contribution. If there is any spare capacity remaining after all of product C has been produced (for example, if there is only enough material available to make a few more of product C) then product B should be produced, etc.

### 36.14 Activity-based costing (ABC)

A single measure of volume is used for each production/service cost centre when apportioning indirect costs under traditional absorption costing. For example:

- machine hours
- direct labour hours
- direct materials cost
- direct labour cost.

These bases are often difficult to justify when the nature of the activity at the cost centre and, more particularly, the nature of the item that is absorbing the cost is considered. In reality, the amount of overhead incurred may depend on any of a range of factors. **An appropriate basis for cost absorption ought to adopt a basis that as truly as possible reflects the changes in overhead arising from the activities undertaken.**

Unfortunately, traditional cross-activity bases such as these can only be truly appropriate to all production when either the nature of the products produced and their production processes are virtually identical *or* when only a small range of products are produced.

Let's look now at an approach to cost apportionment that is considered far more 'accurate' than the traditional marginal and absorption costing bases.

### Cost drivers

Cost drivers are activities that generate cost. They are the factors that cause variable manufacturing costs to be incurred. A cost driver may be related to a short-term variable expense (e.g. machine running costs) – where the cost is driven by production volume and the cost driver will be volume-based (e.g. machine hours). Alternatively, it could be related to a long-term variable overhead (e.g. quality inspection costs) – where the cost is driven by the number of occasions the relevant activity occurs and where the cost driver will be transaction-based (e.g. the number of quality inspections).

**Activity-based costing is the process of using cost drivers as the basis for the apportionment of indirect manufacturing costs to individual products.** Costs are attributed to cost units on the basis of the benefit received from indirect activities, e.g. ordering, setting up equipment so that the item to be produced can be manufactured, and assuring quality.

While this sounds more appropriate than absorption costing, the information required to apply ABC is not generally available from traditional accounting records and organisations that embrace ABC often require to develop a new accounting information system in order to provide that information.



## Cost pools

A cost pool is a collection of individual costs within a single heading. In traditional marginal and absorption costing, cost pools are simply another term for production cost centres. This is not the case under ABC, where a cost pool is created for each activity area. Then, in order to attribute costs held in a cost pool to an item, the amount in the cost pool is divided by the quantity of the related cost driver. This process of cost attribution is very similar to that used in traditional costing – it is the terminology, the manner in which costs are built up, and the type of basis used for cost apportionment that differ.

## ABC vs. traditional costing

It is claimed that traditional marginal and absorption costing underapportions indirect costs to lower-volume products and overapportions them to higher-volume products – that is, they produce potentially misleading information at the two extremes. ABC does not suffer from these defects. As a result, it directs attention to matters of interest that traditional overhead allocation and apportionment is insufficiently sensitive to identify. It should, therefore, be capable of producing more useful information for decision making.

Because administration, selling and distribution overheads are excluded from both financial accounting stock values and cost of sales calculations, traditional indirect cost apportionment stops at the edge of the factory floor. A full analysis of product profitability requires consideration of these non-production overheads, which is one reason why some organisations have chosen to adopt ABC, which *does* include these indirect costs. When companies that use ABC to evaluate stock and cost of sales have to produce their financial statements, it is not difficult removing these non-production costs from the calculated amounts.

## Limitations of ABC

While it is possible to implement an ABC system in most organisations, in many cases it is not worthwhile:

- 1 The costs of implementing and operating such a system often outweigh the benefits, especially for smaller organisations.
- 2 It can often be the case that the additional precision and accuracy that ABC brings is immaterial in the context of managerial decision making.
- 3 For single-product or single-service organisations, ABC is of little benefit.
- 4 Because of the need to exclude administration, selling and distribution costs from the calculation of stock and cost of sales in financial statements, many organisations that implement ABC operate a more traditional costing accounting system in parallel with it. This simply adds to the complexity of the accounting system and can confuse non-accounting-aware managers when they have two different ‘cost’ figures for the same product or item of stock.

However, where organisations have multiple products or services, ABC can prove to be a worthwhile and cost-effective way of increasing the reliability of managerial decision making concerning product pricing.

## Learning outcomes

You should now have learnt:

- 1 Why different costs are often relevant for decision making rather than those used for the calculation of net profit.
- 2 The costs needed when making decisions about the future will often be different from those used when calculating profit in the past.
- 3 The difference between fixed, variable, semi-variable and step-variable costs.
- 4 The difference between absorption and marginal costing.
- 5 How various factors underlie the pricing policy adopted by an organisation.
- 6 Why marginal cost, not full (or absorption cost), is the relevant cost when considering a change in what and/or how much is produced.
- 7 What is meant by full cost pricing.
- 8 The importance of contribution to pricing, production and selling decisions.
- 9 That selling prices should exceed marginal costs. (Almost the only exception to this would be where a product was being promoted as a loss-leader.)
- 10 That, in the long term, the total contributions at given volumes must exceed the fixed costs of the firm.
- 12 What is meant by activity-based costing (ABC).
- 13 The advantages and limitations of ABC.

## Answers to activities

- 36.1** The stock may be rising because we cannot sell the goods, i.e. the business is getting into trouble, yet the financial statements sublimely show a higher profit.
- 36.2** In absorption costing, the whole of the fixed costs were allocated to products, whereas in marginal costing the 'contribution' was found (i.e. revenue *less* variable cost) out of which fixed costs would have to come, leaving the profit as the difference. The problem is how to decide the amount of fixed cost per unit to arrive at 'full cost'.

## Review questions

- 36.1** Raleigh Ltd's costs and revenues for the current year are expected to be:

	£	£
Direct labour		600,000
Direct materials		700,000
Indirect manufacturing costs:		
Variable	450,000	
Fixed	<u>50,000</u>	
		500,000
Administration expenses		120,000
Selling and distribution expenses		60,000
Finance expenses		<u>20,000</u>
		<u>2,000,000</u>





It was expected that 200,000 units would be manufactured and sold, the selling price being £12 each. Suddenly during the year two enquiries were made at the same time which would result in extra production being necessary. They were:

- (A) An existing customer said that he would take an extra 10,000 units, but the price would have to be reduced to £10 per unit on this extra 10,000 units. The only extra costs that would be involved would be in respect of variable costs.
- (B) A new customer would take 15,000 units annually. This would mean extra variable costs and an extra machine would have to be bought costing £15,000 which would last for 5 years before being scrapped. It would have no scrap value. Extra running costs of this machine would be £6,000 per annum. The units are needed for an underdeveloped country and owing to currency difficulties the highest price that could be paid for the units was £9.25 per unit.

On this information, and assuming that there are no alternatives open to Raleigh Ltd, should the company accept or reject these orders? **Draft the memo** that you would give to the managing director of Raleigh Ltd.

**36.2A** Jack Ltd expects its cost per unit, assuming a production level of 200,000 units per annum, to be:

	£
Direct materials	3.2
Direct labour	4.8
Indirect manufacturing costs: Variable	1.6
Fixed	0.8
Selling and distribution expenses	0.4
Administration expenses	0.6
Finance	<u>0.2</u>
	<u>14.0</u>

Selling price is £15 per unit.

The following propositions are put to the managing director. Each proposition is to be considered on its own without reference to the other propositions.

- (a) If the selling price is reduced to £14.80 per unit, sales could be raised to 240,000 units per annum instead of the current 200,000 units. Apart from direct materials, direct labour and indirect fixed manufacturing costs, there would be no change in costs.
- (b) If the selling price is put up to £15.40 per unit, sales would be 160,000 per annum instead of 200,000. Apart from variable costs, there would also be a saving of £4,000 per annum in finance costs.
- (c) To satisfy a special order, which would not be repeated, 10,000 extra units could be sold at £9.80 each. This would have no effect on fixed expenses.
- (d) To satisfy a special order, which would not be repeated, 6,000 extra units could be sold for £9.20 each. This would have no effect on fixed expenses.

**Draft a memo** stating what you would advise the managing director to do, giving your reasons and workings.

**36.3** Assume that two companies have exactly the same pattern of costs and revenue and both use FIFO when valuing stock, but that Columbus Ltd uses a marginal costing approach to the valuation of stock in its financial statements, while Steel Ltd values its stock using absorption costing. **Calculate** the gross profits for each company for each of their first three years in business from the following information:

- (a) Total fixed indirect manufacturing cost is £90,000 per year.
- (b) Direct labour costs over each of the three years were £9 per unit.
- (c) Direct material costs over each of the three years were £15 per unit.
- (d) Variable expenses which vary in direct ratio to production were £6 per unit.
- (e) Sales were: Year 1: 2,700 units; Year 2: 3,600 units; Year 3: 3,300 units.  
The selling price remained constant at £87 per unit.
- (f) Production is at the rate of: Year 1: 3,600 units; Year 2: 3,900 units; Year 3: 3,750 units.

**36.4A** Your company has been trading for three years. It has used a marginal costing approach to value its stock in its financial statements. The directors are interested to know what the recorded profits would have been if absorption costing had been used instead. **Using the following information, prepare a statement for each of the three years comparing both methods.**

- (a) Fixed indirect manufacturing costs are £64,000 per year.
- (b) Direct labour costs per unit over each of the three years were £16 per unit.
- (c) Direct material costs over each of the three years were £12 per unit.
- (d) Variable expenses which vary in direct ratio to production were £20 per unit.
- (e) Sales are: Year 1: 36,000 units; Year 2: 40,000 units; Year 3: 60,000 units. All at £64 per unit.
- (f) Production volumes were: Year 1: 40,000 units; Year 2: 48,000 units; Year 3: 51,000 units.

**36.5** Greatsound Ltd manufactures and sells compact disc players, the cost of which is made up as follows:

	£
Direct material	74.80
Direct labour	18.70
Variable overhead	7.50
Fixed overhead	30.00
Total cost	<u>131.00</u>

The current selling price is £187.

Greatsound Ltd works a day shift only, at present producing 120,000 compact disc players per annum, and has no spare capacity.

Market research has shown that there is a demand for an additional 60,000 compact disc players in the forthcoming year. However, these additional sales would have a selling price of £150 each. One way of achieving the extra production required is to work a night shift. However, this would increase fixed costs by £2,500,000 and the labour force would have to be paid an extra 20 per cent over the day shift rate.

The company supplying the materials to Greatsound Ltd has indicated that it will offer a special discount of 10 per cent on total purchases if the annual purchases of materials increase by 50 per cent.

The selling price and all other costs will remain the same.

Assuming that the additional purchases will only be made if the night shift runs, **you are required to:**

- (a) Advise Greatsound Ltd whether it should proceed with the proposal to commence the night shift, based on financial considerations.
- (b) Calculate the minimum increase in sales and production required to justify the night shift.
- (c) Give **four** other matters which should be taken into consideration when making a decision of this nature.

(AQA (Northern Examinations and Assessment Board): GCE A-level)

### 36.6A

(a) What is meant by the terms *contribution* and *marginal cost*?

- (b) Barton & Co Ltd make and sell 2,000 units per month of a product 'Barco'. The selling price is £65 per unit, and unit costs are: direct labour £8; direct materials £17; variable overheads £11. Fixed costs per month are £29,400.

The company receives two export orders for completion in September 20X2. Order A requests 600 items at a special total price of £20,000; order B requires 750 items at a total price of £34,000. Order A will require no special treatment, but order B will demand extra processing at a cost of £6 per item. The company has sufficient capacity to undertake *either* A *or* B in addition to its current production, but only by paying its direct labour force an overtime premium of 25 per cent.

Calculate the company's contribution and the profits for the month if:

- (i) normal production only takes place
- (ii) order A is accepted in addition to normal production
- (iii) order B is accepted in addition to normal production.
- (c) Use your answer to (b) to demonstrate that a company will normally accept an order which produces a *contribution* towards overheads.

(Edexcel: GCE A-level)





**36.7** Arncliffe Limited manufactures two types of product marketed under the brand names of 'Crowns' and 'Kings'. All the company's production is sold to a large firm of wholesalers.

Arncliffe is in something of a crisis because the chief accountant has been taken ill just as the company was about to begin negotiating the terms of future contracts with its customer. You have been called in to help and are given the following information relating to each product for the last year. This information has been prepared by a junior assistant.

Report on revenues/costs for the year just ended:

	<i>Crowns</i> £	<i>Kings</i> £
Sales	60,000	25,000
Floor space costs (rent and rates)	10,000	5,000
Raw materials	8,000	2,000
Direct labour	20,000	10,000
Insurances	400	200
Machine running costs	12,000	3,000
Net profit	9,600	4,800

The junior assistant says in his report, 'As you can see, Crowns make twice as much profit as Kings and we should therefore stop manufacturing Kings if we wish to maximise our profits. I have allocated floor space costs and insurances on the basis of the labour costs for each product. All other costs/revenues can be directly related to the individual product.'

Further investigation reveals the following information:

- The wholesaler bought all the 20,000 Crowns and 10,000 Kings produced last year, selling them to his customers at £4 and £3 each respectively. The wholesaler is experiencing an increasing demand for Crowns and intends to raise his price next year to £4.50 each.
- Crowns took 8,000 hours to process on the one machine the company owns, whereas Kings took 2,000 hours. The machine has a maximum capacity of 10,000 hours per year.
- Because all production is immediately sold to the wholesaler no stocks are kept.

**Required:**

- Prepare the revenue/cost statement for the year just ended on a marginal cost basis, and calculate the rate of contribution to sales for each product.
- You are told that in the coming year the maximum market demand for the two products will be 40,000 Crowns and 36,000 Kings and that the wholesaler wishes to sell a minimum of 6,000 units of each product. Calculate the best product mix and resulting profit for Arncliffe Limited.
- Calculate the best product mix and resulting profit for Arncliffe Limited if another machine with identical running costs and capacity can be hired for £20,000 per annum. Floor space and insurance costs would not change and the maximum and minimum conditions set out in (b) above continue to apply.
- What points does Arncliffe Limited need to bear in mind when negotiating next year's contract with the wholesaler?

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**36.8A** Reed Ltd manufactures three products A, B and C. Budgeted costs and selling prices for the three months ending 30 September 20X2 are as follows:

	<i>A</i>	<i>B</i>	<i>C</i>
Sales (units per month)	6,000	8,000	5,000
	£	£	£
Selling price per unit	45	44	37
<i>Unit costs</i>			
Direct labour	6	9	6
Direct materials*	20	24	16
Variable overhead	4	3	2
Fixed overhead	5	5	6

Labour costs are £3 per hour, and material costs are £4 per kilo for all products. The total fixed costs are of a general factory nature, and are unavoidable.

The company has been advised by its supplier that due to a material shortage, its material requirement for the month of September will be reduced by 15 per cent. No other changes are anticipated.

**Required:**

- A A statement to show the maximum net profit for the three months ending 30 September 20X2, taking into account the material shortage for the month of September.
- B Explain how the fixed cost element is dealt with in marginal costing and in absorption costing. Briefly explain how this affects any closing stock valuation.

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**Authors' note:** Assume that the materials used in each product are of the same kind.

**36.9** Paul Wagtail started a small manufacturing business on 1 May 20X8. He has kept his records on the double entry system, and has drawn up a trial balance at 30 April 20X9 before attempting to prepare his first final accounts.

**Extract from the Trial Balance of Paul Wagtail at 30 April 20X9**

	£	£
Purchases of raw materials	125,000	
Sales		464,360
Selling expenses	23,800	
Insurance	4,800	
Factory repairs and maintenance	19,360	
Carriage on raw materials	1,500	
Heating and lighting	3,600	
Direct factory power	12,430	
Distribution expenses	25,400	
Production wages	105,270	
Factory supervisor's wages	29,600	
Administration expenses	46,700	
Plant and machinery at cost	88,000	
Delivery vehicles at cost	88,000	
Raw materials returned to supplier		2,100

At 30 April 20X9, he has closing stocks of raw materials costing £8,900. He has manufactured 9,500 completed units of his product, and sold 8,900. He has a further 625 units that are 80 per cent complete for raw materials and production labour, and also 80 per cent complete for factory indirect costs.

He has decided to divide his insurance costs and his heating and lighting costs 40 per cent for the factory and 60 per cent for the office/showroom.

He wishes to depreciate his plant and machinery at 20 per cent p.a. on cost, and his delivery vehicles using the reducing balance method at 40 per cent p.a.

He has not yet made up his mind how to value his stocks of work in progress and finished goods. He has heard that he could use either marginal or absorption costing to do this, and has received different advice from a friend running a similar business and from an accountant.

**Required:**

- (a) Prepare Paul Wagtail's manufacturing, trading and profit and loss accounts for the year ended 30 April 20X9 using *both* marginal and absorption costing methods, preferably in columnar format.
- (b) Advise Paul Wagtail of the advantages and disadvantages of using each method.

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**36.10A** The figures given below are all that could be salvaged from the records after a recent fire in the offices of Firelighters Limited. The company manufactures a single product, has no raw materials or work in progress and values its stocks at marginal cost (i.e. at variable manufacturing cost) using the FIFO basis. It is known that the unit closing stock valuation in 20X0 was the same as in 20X9.

	20X0	20X1
Selling price per unit	£10.00	£10.00
Variable manufacturing cost (per unit produced)	£4.00	£4.00
Variable selling cost (per unit sold)	£1.25	?
Quantity sold (units)	100,000	?
Quantity manufactured (units)	105,000	130,000
Contribution	?	£585,000
Fixed manufacturing costs	£105,000	£117,000
Other fixed costs	£155,000	?
Operating profit before interest charges	?	£292,000
Interest charges	£70,000	?
Opening finished stock (units)	?	?
Closing finished stock (units)	20,000	20,000
Net profit for the year	?	£210,000

**Required:**

Prepare a revenue statement for management showing contribution, operating profit and net profit for each year in as much detail as the information given above permits.

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**36.11A** Gainford Ltd is a manufacturing company which produces three specialist products – A, B and C. For costing purposes the company's financial year is divided into thirteen periods of four weeks. There is always sufficient raw material in stock to meet any planned level of production but there is a maximum number of labour hours available to the company. The production of each product requires a different physical layout of the factory equipment although the labour tasks are broadly similar. For this reason the company only produces one type of product at any time, and the decision as to which product to manufacture is taken before each four week period commences.

A forty hour working week is in operation and the following factory staff are employed:

- Grade 1 28 staff paid at a rate of £8 per hour
- Grade 2 12 staff paid at a rate of £6 per hour

In addition, a limited number of qualified part-time staff can be employed when required. Both full-time and part-time staff are paid at the same rate. The next four week period is number 7 and the following maximum part-time hours are available for that period:

- Grade 1 2,240 hours
- Grade 2 1,104 hours

The production costs and selling costs per unit for each product are:

	A	B	C
	£	£	£
Direct raw material	147	87	185
Direct labour: Grade 1	64	56	60
Grade 2	24	27	21
Variable overheads	15	10	15
Fixed overheads	12	12	12
Selling price of each product	400	350	450

There is a strong demand for all three products and every unit produced is sold.

**Required:**

- (a) Explain the terms:
  - (i) 'contribution'
  - (ii) 'key factor'
- (b) Calculate the contribution and profit obtained when **each** product is sold.
- (c) Prepare a statement from the available information, for period number 7 which will assist management to decide which product to produce in order to maximise contribution. This statement should include details of the:
  - (i) total production labour hours available
  - (ii) number of hours required to produce one unit of **each** type of product
  - (iii) maximum production (in units) possible of **each** type of product
  - (iv) product which will give the greatest contribution in period number 7
- (d) Outline the main steps in the manufacturing decision-making process which ought to be adopted by a business.

(AQA (Associated Examining Board): GCE A-level)

**36.12A** Vale Manufacturing started in business on 1 April 20X3, and incurred the following costs during its first three years.

Year ending 31 March	20X4	20X5	20X6
	£	£	£
Direct materials	60,000	49,900	52,200
Direct labour	48,000	44,000	45,000
Variable overheads	24,000	30,000	40,000
Fixed costs	40,000	40,600	41,300

Sales during the first three years were all at £20 per unit.

Production each year (units)	16,000	14,000	14,000
Sales each year (units)	14,000	14,000	15,000

**Required:**

- (a) Prepare a statement showing the gross profit for each of the three years if the company used:
  - (i) the marginal costing approach to valuing stock;
  - (ii) the absorption costing approach to valuing stock.
- (b) Advise the company of the advantages and disadvantages of using each method.

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**36.13** Frames Ltd make four different products: K, L, M and N. They have ascertained the cost of direct materials and direct labour and the variable overhead for each unit of product. An attempt is made to apportion the other costs in a logical manner. When this is done, 20 per cent is added for profit. The cost of direct labour and materials per unit is K: £28; L: £56; M: £120; N: £64. Variable overheads per unit are K: £8; L: £16; M: £26; N: £24. Fixed overhead costs of £3,800 are allocated per unit as K: £4; L: £8; M: £14; N: £12.

**You are required to:**

- (a) Calculate the prices at which the units would be sold by Frames Ltd if the full cost system of pricing was adhered to.
- (b) What would you advise the company to do if, because of market competition, prices had to be fixed at K: £66; L: £78; M: £140; N: £98?
- (c) Assuming production of 100 units of each item per accounting period, what would be the net profit (i) if your advice given in your answer to (b) was followed; (ii) if the company continued to produce all of the items?
- (d) What would you advise the company to do if, because of market competition, prices had to be fixed at K: £34; L: £96; M: £280; N: £78?







- (e) Assuming production of 100 units of each item per accounting period, what would be the net profit (i) if your advice given in your answer to (d) was followed; (ii) if the company continued to produce all of the items?

**36.14A** Lenses Ltd makes six different products: P, Q, R, S, T and U. An analysis of costs ascertains the following:

Per unit	P	Q	R	S	T	U
	£	£	£	£	£	£
Direct labour and direct materials	45	51	114	147	186	342
Variable manufacturing expenses	18	33	30	63	66	69

Fixed costs of £34,200 are allocated per unit as P: £12; Q: £21; R: £21; S: £30; T: £48; U: £39. Using full cost pricing, 10 per cent is to be added per unit for profit.

**You are required to:**

- Calculate the prices that would be charged by Lenses Ltd if full cost pricing was adhered to.
- What advice would you give the company if a survey of the market showed that the prices charged could be P: £78; Q: £78; R: £198; S: £225; T: £240; U: £660?
- Assuming production of 600 units per period of each unit manufactured, what would be the profit of the firm (i) if your advice in (b) was followed, (ii) if the company continued to produce all of the items?
- Suppose that in fact the market survey had revealed instead that the prices charged could be P: £90; Q: £99; R: £225; S: £198; T: £435; U: £390, what would your advice have been to the company?
- Assuming that production of each item manufactured was 600 units per month, then what would have been the profit (i) if your advice in (d) had been followed, (ii) if the company chose to continue manufacturing all items?

**36.15A**

- What are the differences between marginal cost pricing and full cost pricing?
- How far is it true to state that marginal cost pricing is a short-term strategy?
- A.S. Teriod Ltd makes five different products – Ceres, Eros, Hermes, Icarus and Vesta. The various costs per unit of the products are respectively: direct labour, £14, £8, £22, £18 and £26; direct materials, £8, £10, £13, £12 and £17; variable overheads, £11, £9, £16, £15 and £19.

The fixed expenses for the month of February 20X1 are estimated at £8,200, and this has been allocated to the units produced as Ceres £17, Eros £13, Hermes £19, Icarus £15 and Vesta £18. The company adds 20 per cent on to the total cost of each product by way of profit.

- Calculate the prices based upon full cost pricing.
- Advise the company on which products to produce, if competition forces the prices to: Ceres £59, Eros £25, Hermes £80, Icarus £44 and Vesta £92.
- Assuming that output for the month amounts to 100 units of each model, that fixed costs remain the same irrespective of output and that unused capacity cannot be used for other products: calculate the profit or loss if the company continued to produce the whole range at the new prices; AND if the company followed your advice in (ii) above.

(Edexcel: GCE A-level)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Job, batch and process costing

## Learning objectives

After you have studied this chapter, you should be able to:

- explain how indirect costs are apportioned among cost centres
- explain the difference between the accounting treatment of normal and abnormal losses
- explain the difference between scrap, by-products, and joint products
- discuss some of the issues relating to cost allocation between joint products
- describe the system of job costing
- describe the system of process costing
- explain the appropriate treatment for under- and overabsorbed overheads

## Introduction

In this chapter, you'll learn about the differences between costing for continuous production processes and costing for short-term production runs or one-off production activity. You'll learn more about attributing costs to cost centres, in this case, indirect costs such as service centre costs. Finally, you'll learn about how to deal with costs and revenues relating to by-products and joint products.

### 37.1 Background

The earlier chapters on costing have been concerned mainly with the business as a whole. You have seen the effects of and differences between applying marginal and absorption costing, and you have seen the flow of costs through manufacturing and retail businesses. Now we have to consider the actual use of these concepts in the application of costing in businesses. So far, things have been simplified so that the concepts could be seen and understood. For instance, it has been assumed in most of the *exhibits* that the businesses have been making only one kind of product, and that there has really been only one cost centre. Without stretching your imagination greatly, you will realise that businesses often manufacture many different items, and that most have a large number of cost centres.

Costing systems can usually be divided into two main types, (a) **job costing**, and (b) **process costing**. These two main types of costing system may adopt either an absorption or marginal costing approach, and may use FIFO or LIFO or AVCO methods of pricing issues from stock, etc.

It is important to realise that absorption costing and marginal costing are *not* costing systems. Rather, they are approaches to costing which are adopted when job or process costing systems are used.

## 37.2 Process costing or job costing?

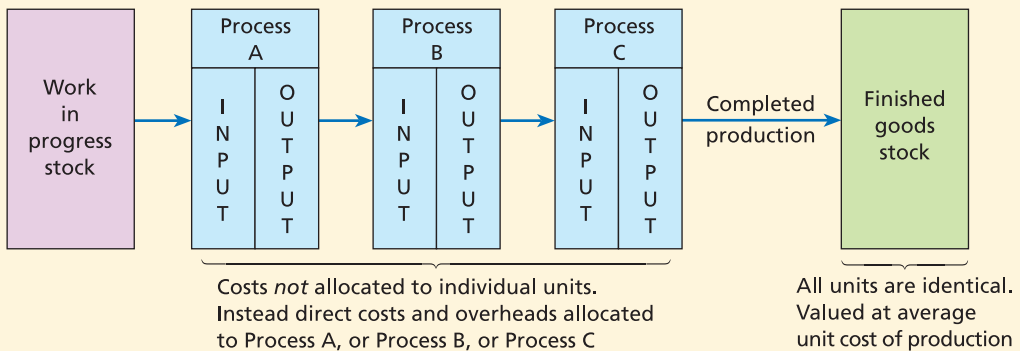
Job costing is used when a finite number of units of a single product are made in one continuous batch. A job may be one single unit, as in the case of a bicycle manufacturer which produces bikes to the precise and very individual requirements of its customers. Alternatively, a job may comprise of many units. However, irrespective of the number of units involved, jobs are not often repeated and tend to all be uniquely different.

Process costing is used when production of identical products is continuous and lasts for a significant time. Unlike jobs, process products tend to be repeated as, for example, in a jam factory where the same five different jams are produced each week, each one being produced for an entire day.

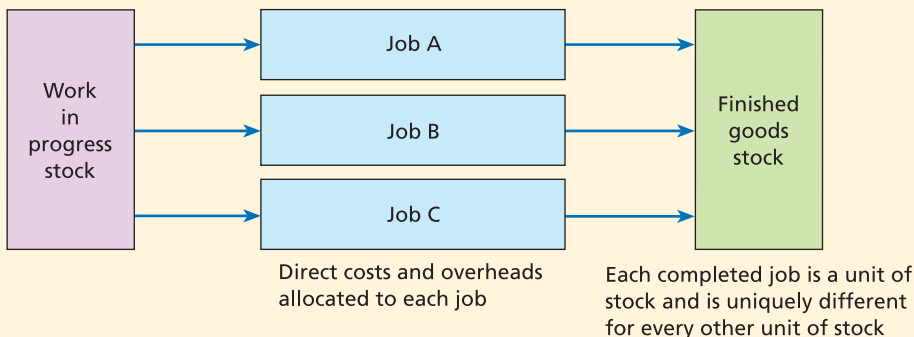
Thus, process costing is relevant where production is a continuous flow, and is most applicable in industries where production is repetitive and continuous. For example, an oil refinery where crude oil is processed continually, emerging as different grades of petrol, paraffin, motor oil, etc. Another instance would be a salt works where brine (salt water) is pumped into the works, and the product is slabs or packets of salt. Salt works and oil refineries will have a repetitive and continuous flow of production and would, therefore, use process costing.

### Exhibit 37.1

#### Process costing



#### Job costing



Contrasted with this would be production comprising of separate jobs for special orders which could be just one item or of a batch of items. For instance, where bodies of Rolls-Royce cars are made to each customer's specifications, each car can be regarded as a separate job. Compared with this would be a printer's business where books are printed, so that the printing of say 5,000 copies of a book can also be regarded as a job. **The 'job' can thus be one item or a batch of similar items.**

Two terms are used to describe this *specific order* form of costing. 'Job costing', when costs are to be attributed to an individual job (a customer order or task of relatively short duration); and '**batch costing**', when costs are to be attributed to a specific batch of a product (a group of similar items which is treated as a separate cost unit (a unit of product or service in relation to which costs are ascertained)).

The accounting treatment is the same. For our purposes, **in this chapter, we will only refer to job costing. If you are asked to perform batch costing, remember that the accounting approach is the same.** (Review Question 37.9 is on batch costing.)

We can compare process costing to job costing by using diagrams of the different types of costing. These are shown above in Exhibit 37.1.

Let's now look in detail at job costing.

### 37.3 Job costing

**When job costing is used, each job is given a separate job number, and direct materials and direct labour used on the job are charged to the job.** As a result, the job is the cost centre. The accumulation of the costs is done on a 'job cost sheet', which is simply a formal record of the costs incurred. (You will see examples of job cost sheets later in this chapter.) The materials will be charged to a job on a FIFO, LIFO, or AVCO basis. The direct labour costs will be found by recording the number of direct labour hours of each type of direct worker, and multiplying by the labour cost per hour for each type.

**As the job is the cost centre,** direct labour and direct materials can be charged directly to it. Indirect expenses, of course, cannot be charged directly to a job. Instead, they are charged to a service centre and the cost of the service centre is then apportioned between the various jobs to enable the cost of each job including indirect expenses to be calculated.

It is only after the end of the accounting period that the exact costs of each service centre for the period are known, but you need to know how much each job cost when it is finished, not several months later at the end of the accounting period.

#### Activity 37.1

How do you think this is done?

Let's consider an example. Suppose that four jobs are being done, each in a separate production department: A, B and C. There are also two service centres, G and H. Some of the indirect labour expenses and other indirect expenses can be allocated directly to departments – for instance the wages of the foremen (i.e. manager) of each of departments A, B and C; and items such as lubricating materials if each department used different lubricants. Other indirect labour and indirect expenses can be traced to the two service centres G and H. How will the costs accumulated in G and H be apportioned between departments A, B and C? One possibility is shown in Exhibit 37.2.

**Exhibit 37.2**

Indirect labour costs and other indirect expenses have been allocated to production departments A, B and C and service departments G and H as follows:

	<i>Production departments (£s)</i>			<i>Service departments (£s)</i>	
	A	B	C	G	H
Indirect labour	2,000	3,000	4,000	500	1,000
Other indirect expenses	<u>1,000</u>	<u>2,000</u>	<u>3,000</u>	<u>1,500</u>	<u>2,000</u>
	<u>3,000</u>	<u>5,000</u>	<u>7,000</u>	<u>2,000</u>	<u>3,000</u>

The problem is to apportion the costs of G and H to the production departments. Department G maintains the factory buildings while Department H maintains the factory machinery.

A study of the costs of Department G made it obvious how its costs should be apportioned. There was no doubt that the costs were in direct relationship to the floor space occupied by each department. But it must not be overlooked that Department H also needed the attention of Department G's workforce so that part of the costs of G must be apportioned to Department H.

These costs increase the total of the costs of Department H, which must then be apportioned between the three production departments. Floor space in square feet was A 2,000, B 4,000, C 3,000 and H 1,000. The £2,000 costs of Department G were therefore apportioned using the formula:

$$\frac{\text{Floor space in the department}}{\text{Total floor space}} \times £2,000$$

Therefore:

$$\begin{array}{l}
 \text{£} \\
 \text{A } \frac{2,000}{10,000} \times £2,000 = 400 \\
 \text{B } \frac{4,000}{10,000} \times £2,000 = 800 \\
 \text{C } \frac{3,000}{10,000} \times £2,000 = 600 \\
 \text{H } \frac{1,000}{10,000} \times £2,000 = \underline{200} \\
 \underline{2,000}
 \end{array}$$

Department H's costs have now increased by £200 to £3,200.

The apportionment of Department H's costs is far less straightforward. Apportionment based on the number of machines, volume of production, and type of machinery were all considered. However, let's suppose it was felt that there was a high relationship in this case between the value of the machinery in use and the costs of maintaining it. The more costly equipment was very complicated and needed a lot of attention. Consequently, it was decided to apportion Department H's costs between A, B and C on the basis of the value of machinery in each department: A £3,000; B £6,000; and C £7,000. The costs were therefore apportioned using the formula:

$$\frac{\text{Value of machinery in department}}{\text{Total value of machinery in all 3 departments}} \times £3,200$$

Therefore:

$$\begin{array}{l}
 \text{£} \\
 \text{A } \frac{3,000}{16,000} \times £3,200 = 600 \\
 \text{B } \frac{6,000}{16,000} \times £3,200 = 1,200 \\
 \text{C } \frac{7,000}{16,000} \times £3,200 = \underline{1,400} \\
 \underline{3,200}
 \end{array}$$

The costs and their apportionment can, therefore, be shown:

	<i>Production departments (£s)</i>			<i>Service departments (£s)</i>	
	A	B	C	G	H
Indirect labour	2,000	3,000	4,000	500	1,000
Other expenses	1,000	2,000	3,000	1,500	2,000
	<u>3,000</u>	<u>5,000</u>	<u>7,000</u>	<u>2,000</u>	<u>3,000</u>
Department G's costs apportioned	400	800	600	(2,000)	200
					<u>3,200</u>
Department H's costs apportioned	600	1,200	1,400	—	(3,200)
	<u>4,000</u>	<u>7,000</u>	<u>9,000</u>	<u>—</u>	<u>—</u>

This continuous method of apportioning service department overheads is sometimes called the **repeated distribution method**.

(See Review Question 37.7 for a discussion of this and another method, the elimination method.)

We have now identified the indirect expenses for each department. We now have another problem – how are these costs to be taken into the calculation of the cost of each job in these departments?

After investigation, Departments A and B are found to have a direct relationship between direct labour hours and indirect expenses but, in Department C, the guiding factor is machine hours.

If the total overheads of Departments A and B are divided by the total direct labour hours in those departments, this will give the indirect expenses rate per direct labour hour while, in Department C, the total indirect expenses will be divided by the total machine hours. The calculation of the indirect expenses rates are therefore:

	<i>Production departments</i>		
	A	B	C
Direct labour hours	5,000	4,000	
Machine hours			6,000
Indirect expenses rate per direct labour hour	$\frac{£4,000}{5,000}$	$\frac{£7,000}{4,000}$	
	= £0.8	= £1.75	
Indirect expenses rate per machine hour			$\frac{£9,000}{6,000}$
			= £1.5

(Note: The indirect expenses rate is often referred to as the 'overhead rate'. As this is the term preferred by most examiners, we will use it from now on.)

We can now calculate the costs of the four jobs being done in this factory:

	<i>Department A</i>
Job A/70/144	Started 1.7.20X2. Completed 13.7.20X2
	Cost of direct materials £130
	Number of direct labour hours 100
	Cost rate of direct labour per hour £0.9
	<i>Department B</i>
Job B/96/121	Started 4.7.20X2. Completed 9.7.20X2
	Cost of direct materials £89
	Number of direct labour hours 40
	Cost rate of direct labour per hour £1.1
	<i>Department C</i>
Job C/67/198	Started 8.7.20X2. Completed 16.7.20X2
	Cost of direct materials £58
	Number of direct labour hours 50
	Cost rate of direct labour per hour £1.0
	Number of machine hours 40



*Departments A and C*

Job AC/45/34 Started in A 3.7.20X2. Passed on to C 11.7.20X2. Completed in C 16.7.20X2

Cost of materials £115

Number of direct labour hours (in Dept A) 80

Number of direct labour hours (in Dept C) 90

Cost rate per direct labour hour Dept A £0.9

Dept C £1.0

Number of machine hours, Dept C 70

The job cost sheets for these four jobs are shown below. If an absorption costing approach had been used, indirect expenses (i.e. overheads) would include both fixed and variable indirect expenses. If a marginal costing approach had been used, the indirect expenses brought into the calculations of job costs would exclude fixed indirect expenses and, consequently, the overhead rate would be a variable one.

<i>Job Cost Sheet. Job No. A/70/144</i>			
Started 1.7.20X2		Completed 13.7.20X2	
	<i>Hours</i>	<i>Overhead Rates (£s)</i>	<i>£</i>
Direct materials			130
Direct labour	100	0.9	90
Indirect manufacturing costs	100	0.8	80
Total job cost			<u>300</u>
<i>Job Cost Sheet. Job No. B/96/121</i>			
Started 4.7.20X2		Completed 9.7.20X2	
	<i>Hours</i>	<i>Overhead Rates (£s)</i>	<i>£</i>
Direct materials			89
Direct labour	40	1.1	44
Indirect manufacturing costs	40	1.75	70
Total job cost			<u>203</u>
<i>Job Cost Sheet. Job No. C/67/198</i>			
Started 8.7.20X2		Completed 16.7.20X2	
	<i>Hours</i>	<i>Overhead Rates (£s)</i>	<i>£</i>
Direct materials			58
Direct labour	50	1.0	50
Indirect manufacturing costs	40	1.5	60
Total job cost			<u>168</u>
<i>Job Cost Sheet. Job No. AC/45/34</i>			
Started 3.7.20X2		Completed 16.7.20X2	
	<i>Hours</i>	<i>Overhead Rates (£s)</i>	<i>£</i>
Direct materials			115
Direct labour (Dept A)	80	0.9	72
Direct labour (Dept C)	90	1.0	90
Indirect manufacturing costs (Dept A)	80	0.8	64
Indirect manufacturing costs (Dept C)	70	1.5	105
Total job cost			<u>446</u>

## 37.4 Cost centres – job costing and responsibility

It must be pointed out that the use of a cost centre for job costing is not necessarily the same as tracing the costs down to the individual who is responsible for controlling them. There are two requirements here: (a) finding the cost of a job to check on its profitability and (b) controlling the costs by making someone responsible for them so that he/she will have to answer for any variations from planned results. As a result, many organisations keep separate records of costs to fulfil each of these functions when the appropriate cost centre to use for job costing is inappropriate for matching costs to the individuals responsible for those costs.

Now, let's look at process costing.

## 37.5 Process costing

Job costing treats production as comprising of a number of separate jobs, whereas process costing sees production as a continuous flow. **In process costing, no attempt is made to allocate costs to specific units being produced.**

There is, however, usually more than one process in the manufacture of goods. Take, for example, a bakery producing cakes. There are three processes: (A) the mixing of the cake ingredients, (B) the baking of the cakes, and (C) the packaging of the cakes. Each process is treated as a cost centre.

The costs for (A), (B) and (C) are, therefore, collected separately. Overhead rates are then calculated for each cost centre in a similar fashion to that in job costing.

In the case of the bakery, each accounting period would probably start and finish without any half-mixed or half-baked cakes, but many businesses which use process costing have processes which take rather longer to complete than baking cakes. A typical case would be the brewing of beer. At the beginning and end of each period there are stocks of partly processed units. It is a simple arithmetic exercise to convert unfinished units in production into 'equivalent units produced' (which is also known as **equivalent production**). For example, production during a particular period may be as in Exhibit 37.3.

### Exhibit 37.3

Started and $\frac{3}{4}$ completed in previous period and $\frac{1}{4}$ completed in current period, 400 units: $400 \times \frac{1}{4}$	100
Started and completed in current period	680
Started in current period and $\frac{1}{8}$ completed by end of period, 160 units: $160 \times \frac{1}{8}$	20
Equivalent production	<u>800 units</u>

If the total costs of the cost centre amounted to £4,000 then the unit cost would be:

$$\frac{£4,000}{800} = £5$$

Process costing becomes more complicated if some of the part-produced items are, for example, complete in terms of materials, but incomplete in terms of labour; or  $\frac{2}{3}$  complete for material and  $\frac{1}{4}$  complete for labour. Although the situation is more complicated, the principles are no different from those described for calculating equivalent production when the proportion used of all items is the same.

We can now look at an example of process costing in Exhibit 37.4. So that we do not get involved in too many arithmetical complications, we will assume that there are no partly completed goods in any process either at the start or end of the period.



**Exhibit 37.4**

A bakery making cakes has three processes, process (A) the mixing of the cake ingredients, (B) the baking of the cakes, and (C) the packaging of the cakes.

Activity in January was:

<i>Direct materials used:</i>	£
Process (A)	4,000
Process (B)	–
Process (C)	1,000
<i>Direct labour:</i>	
Process (A)	1,500
Process (B)	500
Process (C)	800
<i>Indirect manufacturing costs:</i>	
Variable:	
Process (A)	400
Process (B)	1,300
Process (C)	700
Fixed: (allocated to processes)	
Process (A)	600
Process (B)	500
Process (C)	400

100,000 cakes were made during January. The process cost accounts are:

<i>Process (A)</i>			
	£		£
Direct materials	4,000	Transferred to process (B)	
Direct labour	1,500	100,000 units at £0.065	6,500
Variable factory indirect costs	400		
Fixed factory indirect costs	600		
	<u>6,500</u>		<u>6,500</u>
<i>Process (B)</i>			
	£		£
Transferred from process (A)		Transferred to process (C)	
100,000 units at £0.065	6,500	100,000 units at £0.088	8,800
Direct labour	500		
Variable indirect manufacturing costs	1,300		
Fixed indirect manufacturing costs	500		
	<u>8,800</u>		<u>8,800</u>
<i>Process (C)</i>			
	£		£
Transferred from process (B)		Transferred to finished goods stock	
100,000 units at £0.088	8,800	100,000 units at £0.117	11,700
Direct materials	1,000		
Direct labour	800		
Variable indirect manufacturing costs	700		
Fixed indirect manufacturing costs	400		
	<u>11,700</u>		<u>11,700</u>

Now, let's look at what is done when fewer products are produced during a process than was expected.

### 37.6 Normal and abnormal losses

There are some production losses that are a result of the production process which cannot be avoided and, as a result, the costs they represent cannot be eliminated from the total cost of the products produced. For instance, when printing books, losses of paper occur when paper is cut to the required size; when brewing beer there will be losses due to evaporation, when cutting steel the amount of cut steel will be less than the amount of steel before it was cut. **These losses are inevitable, even in the most efficient businesses. They are called 'normal losses' (sometimes called 'uncontrollable losses').**

On the other hand, there are losses which should be avoided if the production process is efficient. Such things as the incorrect cutting of cloth so that it is wasted unnecessarily, not mixing ingredients properly so that some of the product is unusable, and the use of inferior materials so that much of the product cannot pass quality inspection tests and is scrapped. **These are all examples of 'abnormal losses' (sometimes called 'controllable losses').**

The accounting treatments of these two very different types of losses are:

- **Normal losses.** These are not transferred from the process account but are treated as part of the process costs.
- **Abnormal losses.** These are transferred out of the process account and into an abnormal loss account. The double entry is:

Dr Abnormal loss account  
Cr Process account

**As a result, an abnormal loss is not included in the cost of items produced. Instead, it is treated as a period cost.**

#### Activity 37.2

How do you think this is done?

### 37.7 Under/overabsorption of overheads

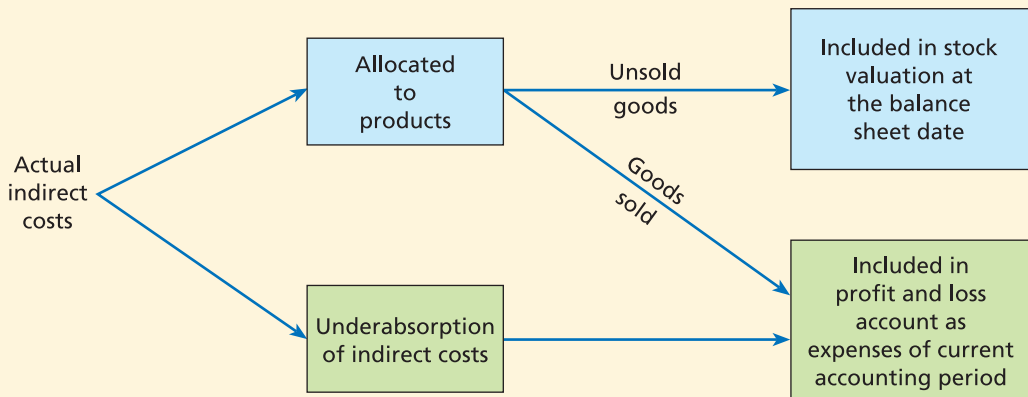
When an overhead rate is based on estimated annual indirect expenditure and estimated activity, it is not usually the same as it would have been had it been calculated at the end of the accounting period, when all costs are known. Either the costs themselves will differ from expectations, or the activity will not have proceeded as expected, or both.

For example, if £300,000 has been allocated for indirect costs to the year's production, but actual indirect costs were £298,000 then too much has been allocated. In other words, an over-absorption of indirect expenses has occurred amounting to £2,000. (Overabsorption is sometimes referred to as 'over-recovery'.)

If, on the other hand, £305,000 had been allocated but the actual costs were £311,000 then too little has been allocated. This would represent an underabsorption of indirect costs (i.e. overheads) amounting to £6,000. (Underabsorption is sometimes referred to as 'under-recovery'.)

At the closing balance sheet date, stock has been valued and this value includes something for indirect costs. In the case of an underabsorption, the question arises as to whether the closing stock valuation should be amended to include something for the underabsorbed overheads. **The accounting answer is that no adjustment should be made to the stock valuation.** Similarly, the stock valuation should not be reduced to take account of overabsorption of overheads.

Exhibit 37.5 shows how the indirect costs should be treated when there is an underabsorption of those costs which was caused by abnormal losses.

**Exhibit 37.5**

Any overabsorption is also included in the profit and loss account, but as a credit.

### 37.8 Other kinds of businesses

Process costing is found most often in industries such as oil, canning, paint manufacture, steel, textiles and food processing.

### 37.9 The problem of joint costs

A manufacturing operation often results in only one product being produced. Any excess output other than the product itself is regarded as scrap, and the small cost that could be traced to it is ignored. For example, in the manufacture of a suit, when the cost is traced to the suit, the small unusable bits of cloth that are left over are ignored.

This is not always the case. **Where a group of separate products is produced simultaneously, each of the products having relatively substantial sales values, then the products are referred to as 'joint products'.** For example, crude oil taken to an oil refinery where it is processed into different grades of petrol, paraffin, motor oil, etc., all of which are joint products. The costs of the materials and processes, etc. must then be split between the joint products.

Many problems exist in doing so. Perhaps you will see why when you consider the problem of allocating the costs cutting up a cow for beef. From a cow there is rump steak, fillet steaks, T-bone steaks, sirloin, silverside, brisket, etc. If cutting up the cow cost £20, then how would you allocate the cost between all of these various joint products? This gives you some idea of the type of problems which can exist – in many industries this becomes increasingly problematic as the production technology in use increases in complexity.

#### Activity 37.3

How would you split the cost of cutting up the cow between joint products?

**In fact, you could allocate the costs on any basis and none would be indisputably 'correct'. With joint products, there is no rational reason or basis for splitting their costs that cannot be argued against.**

Sometimes, a minor (i.e. much lower value) but, nevertheless, distinguishable product is produced at the same time as the main product. One example is the sawdust that is created when wood is being converted into furniture. Such a product is known as a **'by-product'**. In most cases, the costs involved is to ignore them and simply credit any income derived from sale of the by-product against the cost of producing the main product(s).

## Learning outcomes

You should now have learnt:

- 1 That neither marginal costing nor absorption costing are costing 'systems'; rather, they are approaches to costing which are used when job or processing costing systems are used.
- 2 The differences between job (and batch) costing and process costing.
- 3 That direct costs can be allocated directly to the relevant cost centre. However, indirect costs have to be apportioned among cost centres on an appropriate basis, as there is no way of knowing precisely how much indirect cost was incurred on each item produced.
- 4 How indirect costs can be apportioned across cost centres.
- 5 How to deal with normal and abnormal losses.
- 6 About the problems relating to cost allocation between joint products.

## Answers to activities

- 37.1** The indirect expenses attributed to each service centre are estimated and then apportioned using an appropriate base to each job.
- 37.2** It is charged to the debit of the profit and loss account at the end of the period.
- 37.3** Among the obvious choices, you could allocate the joint costs on the basis of the sale price of each of the joint products, or on the basis of the relative weight or volume of the joint products.

## Review questions

**Advice:** Questions on job costing and process costing are usually fairly easy to answer and it is also relatively simple to gain quite high marks by tackling them. Don't forget, if a question refers to 'batch costing', this is accounted for using the same accounting procedures as job costing.

**37.1** In a factory, four types of jobs are performed in separate production departments A, B, C and D. In addition there are three service departments, K, L and M. Costs have been allocated to the departments as follows:

	Production departments				Service departments		
	A	B	C	D	K	L	M
	£	£	£	£	£	£	£
Indirect labour	8,000	12,000	16,000	4,000	3,000	6,000	8,200
Other expenses	5,400	6,200	7,200	3,000	9,000	4,000	4,000



The expenses of the service departments are to be allocated between other departments as follows:

Dept K to Depts A 20 per cent: B 25 per cent: C 30 per cent: D 15 per cent: M 10 per cent.

Dept L to Depts A 35 per cent: C 45 per cent: D 20 per cent.

Dept M to Depts B 40 per cent: C 25 per cent: D 35 per cent.

In departments A and C the job costing is to use an overhead rate per direct labour hour, while in B and D a machine hour rate will be used. The number of direct hours and machine hours per department is expected to be:

	A	B	C	D
Direct labour hours	4,000	8,000	8,900	5,400
Machine hours	3,800	5,200	5,800	4,800

**You are required to calculate:**

- The overhead rates for departments A and C.
- The overhead rates for departments B and D.

**(Keep your answer – it will be used as a basis for the next question.)**

**37.2** For the factory in Question 37.1, what would be the costs of the following jobs given that the direct labour costs per hour are: Dept A £5; B £4; C £6; D £7?

Job 351: Dept A	Direct materials cost	£760
	Number of direct labour hours	112
	Number of machine hours	80
Job 352: Dept B	Direct materials cost	£3,597
	Number of direct labour hours	256
	Number of machine hours	252
Job 353: Dept C	Direct materials cost	£2,000
	Number of direct labour hours	390
	Number of machine hours	300
Job 354: Dept D	Direct materials cost	£1,998
	Number of direct labour hours	180
	Number of machine hours	128
Job 355: Dept C	Direct materials cost	£1,680
	Number of direct labour hours	320
	Number of machine hours	300
	Job passed on to Dept B where additional direct materials cost	£204
	Number of direct labour hours	60
	Number of machine hours	40

**37.3A** A manufacturer is producing five types of job, each in a separate production department P, Q, R, S and T. In addition, there are two service departments F and G. Costs have been allocated to the departments as follows:

	Production departments				Service departments		
	P	Q	R	S	T	F	G
	£	£	£	£	£	£	£
Indirect labour	15,000	21,000	9,000	18,000	12,000	20,000	18,000
Other expenses	2,000	3,000	4,000	4,500	1,500	8,000	10,000

The expenses of the service departments are to be allocated between other departments as follows:

Dept F to Depts P 15 per cent; Q 10 per cent; S 40 per cent; T 20 per cent; G 15 per cent.

Dept G to Depts P 20 per cent; Q 15 per cent; R 30 per cent; S 25 per cent; T 10 per cent.

In departments R and T the job costing is to use an overhead rate per direct labour hour, while in the other production departments a machine hour rate will be used. The number of direct labour hours and machine hours per department is expected to be:

	P	Q	R	S	T
Direct labour hours	10,000	12,000	8,000	15,000	5,000
Machine hours	7,000	9,000	5,000	14,000	3,000

**You are required to calculate:**

- The overhead rates for departments R and T.
- The overhead rates for departments P, Q and S.

**(Keep your answer – it will be used for Question 37.4A.)**

**37.4A** For the company in Question 37.3A, what would be the costs of the following jobs, given that the direct labour rate per hour is Dept P £6; Q £9; R £8; S £11; T £10?

Job 701: Dept R	Direct materials cost	£345
	Number of direct labour hours	105
	Number of machine hours	87
Job 702: Dept T	Direct materials cost	£3,240
	Number of direct labour hours	540
	Number of machine hours	480
Job 703: Dept P	Direct materials cost	£1,560
	Number of direct labour hours	400
	Number of machine hours	280
Job 704: Dept S	Direct materials cost	£196
	Number of direct labour hours	620
	Number of machine hours	90
Job 705: Dept Q	Direct materials cost	£11,330
	Number of direct labour hours	860
	Number of machine hours	610
Job 706: Dept P	Direct materials cost	£1,480
	Number of direct labour hours	600
	Number of machine hours	540
	Then passed to Dept T for completion where direct materials cost	£32
	Number of direct labour hours	36
	Number of machine hours	6

### 37.5

- Define the term *equivalent production* and state when the principle is used.
- During May 20X1, M Wurzel & Co. Limited's output was 4,000 finished items plus 600 partly finished items. There was no work in progress on 1 May 20X1.

	Materials	Labour	Overheads	Total
Total cost (£)	8,172	7,120	5,196	20,488
WIP degree of completion %	90	75	55	–

**Calculate for the month of May 20X1:**

- the total equivalent production for each cost element;
- the cost per complete unit;
- the value of the work in progress.

(Edexcel: GCE A-level)



**37.6A**

- (a) What is meant by the term *equivalent production*?
- (b) At Earith Industries at the beginning of April there were no partially finished goods on hand. During the month, 6,000 completed units were produced, together with 800 units partially completed. Details of the partially finished items were:

	Total cost (£)	Percentage completed
Materials	12,540	75
Labour	8,476	65
Overheads	7,084	55

**Calculate:**

- (i) the total equivalent production,  
 (ii) the cost per complete unit,  
 (iii) the total value of work in progress.

(Edexcel: GCE A-level)

**37.7**

- (a) Explain the difference between the terms *overhead allotment*, *overhead apportionment* and *overhead absorption*.
- (b) Why are *estimated* figures used in calculating overhead absorption rates?
- (c) The following information relates to the Flyby Knight Plc for the six months ended 31 December 20X1:

	Production Departments			Service Departments	
	A	B	C	X	Y
Overheads (£)	14,000	12,000	8,000	4,000	3,000
Overheads to be apportioned:					
Dept X (%)	35	30	20	–	15
Dept Y (%)	30	40	25	5	–

- (i) Use the continuous apportionment (repeated distribution) method to apportion the service departments' overheads between each other.
- (ii) Apportion the service departments' overheads calculated in (i) to the production departments.
- (iii) Show how the overheads apportioned to the production departments would have differed if the elimination method had been used for the service departments.
- (iv) State how far it is true to say that the elimination method produces an inaccurate answer, and is therefore not to be recommended.

(Edexcel: GCE A-level)

**37.8A** Kalmo Ltd offers a subcontracting service in assembly, painting and packing. Components are supplied by customers to the company, the required operations are then carried out, and the completed work returned to the customer. The company is labour intensive, with only a relatively small amount of materials purchased.

Currently, one factory overhead recovery rate is used which is a percentage of total direct labour costs. This is calculated from the following budgeted costs.

Department	Direct labour costs £	Direct labour hours	Machine hours	Factory overheads £
Assembly	450,000	150,000	6,000	180,000
Painting	500,000	140,625	–	225,000
Packing	250,000	100,000	8,000	75,000

The cost sheet for Job 131190 shows the following information:

Department	Direct labour costs £	Direct labour hours	Machine hours	Direct material costs £
Assembly	2,500	1,000	120	100
Painting	2,200	900	–	400
Packing	4,800	960	80	500

General administration expenses of 20 per cent are added to the total factory costs, and then a further 25 per cent of the total cost is added as profit, to arrive at the selling price.

Although the company has been using the blanket factory overhead recovery rate for a number of years, one of the directors has questioned this method, and asks if it would be possible to apply overhead recovery rates for each department.

**Required:**

- Calculate the current factory overhead recovery rate, and apply this to arrive at the selling price for Job 131190.
- In line with the director's comments, calculate overhead recovery rates for each department, using two alternative methods, and apply both to arrive at new selling prices for Job 131190.
- Briefly evaluate the methods you have used for the recovery of factory overheads, justifying which one you consider to be most appropriate.
- Outline how an unsatisfactory method of overhead absorption can affect the profits of a business.

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### 37.9

- What is meant by the term 'specific order costing'?
- In what ways does specific order costing differ from process costing?
- The Acme Shelving Co. Ltd manufactures shelving brackets in batches of 300. During May, Batch No. 23 was machined at a rate of 15 per hour. Sixty of the brackets failed to pass inspection, but of these, 40 were thought to be rectifiable. The remaining 20 were scrapped, and the scrap value was credited to the batch cost account. Rectification work took nine hours.

*Batch No. 23*

	£
Raw materials per bracket	1.60
Scrap value per bracket	0.86
Machinists' hourly rate	4.20
Machine hour overhead rate (running time only)	3.60
Setting up of machine: normal machining	21.00
rectification	18.00

**Calculate:**

- the cost of Batch No. 23 in total and per unit, if all units pass inspection;
- the *actual* cost of Batch No. 23, in total and per unit, after crediting the recovery value of the scrapped components, and including the rectification costs;
- the loss incurred because of defective work.

(Edexcel: GCE A-level)

**37.10A** Horden Products Ltd manufactures goods which could involve any or all of three production departments. These departments are simply entitled **A**, **B** and **C**. A direct wages cost percentage absorption rate for the recovery of production overheads is applied to individual job costs.

Details from the company's budgets for the year ended 31 March 20X5 are as follows:

	Dept A	Dept B	Dept C
Indirect materials	£23,000	£35,000	£57,000
Indirect wages	£21,000	£34,000	£55,000
Direct wages	£140,000	£200,000	£125,000
Direct labour hours	25,000	50,000	60,000
Machine hours	100,000	40,000	10,000





The following information is also available for the production departments:

	Dept A	Dept B	Dept C
Area (square metres)	30,000	20,000	10,000
Cost of machinery	£220,000	£160,000	£20,000
Horse power of machinery	55	30	15
Other budgeted figures are:	£		
Power	120,000		
Rent, rates, light, heat	90,000		
Insurance (machinery)	20,000		
Depreciation	80,000		

Machinery is depreciated on the basis of 20% on cost.

Job No. 347 passed through all three departments and incurred the following actual direct costs and times:

	Direct material	Direct wages	Direct labour hours	Machine hours
	£	£	£	£
Dept A	152	88	35	60
Dept B	85	192	90	30
Dept C	52	105	45	10

A sum amounting to 30% of the production cost is added to every job to enable a selling price to be quoted.

**Required:**

- A statement to show the total production overheads per department and calculate the absorption rate which the company has adopted.
- Calculate the selling price to be quoted for Job No. 347.
- Using the available data, calculate absorption rates when based on:
  - direct labour hour rate;
  - machine hour rate.
- Explain clearly the meaning of the following terms relating to overheads:
  - allotment;
  - allocation;
  - apportionment.

(AQA (Associated Examining Board): GCE A-level)

### 37.11A

- Explain the following terms as used in process costing:
  - normal losses
  - abnormal losses
  - equivalent production
  - joint cost
  - split-off point.
- In process costing, it is neither the technology nor the costs incurred, but the market price of the item, which determines whether an item is classed as:
  - scrap or waste; and
  - a joint product or a by-product.

How far do you agree?

(Edexcel: GCE A-level)

# BUDGETS



## Introduction

This part looks at how management can institute a system to support planning, evaluation and control through the use of budgets.

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<b>40</b>	Co-ordination of budgets	594



# Budgeting and budgetary control

## Learning objectives

After you have studied this chapter, you should be able to:

- describe the budgetary process
- explain the importance of budgets for planning and control
- explain how to apply the economic order quantity approach to stock control

## Introduction

In this chapter, you'll learn about the need for budgeting, how production budgets can be set, both when production is to be at a constant level and when it is to vary according to demand. You will also learn about how to determine the most appropriate point in time to order new supplies and about alternatives to traditional methods of ensuring that sufficient raw materials and bought-in goods for resale are available for production and sale when required.

### 38.1 Background

In Chapters 34 and 35, you learnt that management control is needed if organisations are to achieve their objectives. Once the objectives of an organisation have been agreed, plans need to be drawn up so that the objectives can be met.

Don't assume that plans can only be expressed in monetary terms and values. For example, quality of the product might be best shown in engineering terms, or social objectives shown in a plan concerned with employee welfare. But some of the objectives, such as the attainment of a desired profit, or of the attainment of a desired growth in assets can be expressed and measured in monetary terms and values.

When a plan is expressed quantitatively (i.e. in numbers – monetary amounts or quantities) it is known as a '**budget**' and the process of converting plans into budgets is known as '**budgeting**'. In this book, we are concerned primarily with budgets shown in monetary terms, i.e. 'financial budgets'.

A budget is like a lane on a motorway. You may enjoy being able to switch lanes and, at times, you may need to do so but, if you want to reach your destination at a specific time, you need to spend as much of the journey as possible in the lane that is most appropriate for the time you have available.

The budgeting process may be very formal, as it typically is in most large organisations. Sometimes it may be so formal a process that committees are set up to co-ordinate and review the task. On the other hand, in a very small organisation the owner may jot down his budget on a piece of scrap paper or the back of a used envelope. Some even manage without writing

anything down at all, they have done the budgets in their heads and can remember them easily. In this book, we will focus upon budgeting in a formal manner.

## 38.2 Budgets and people

**In no other part of accounting is there a greater need for understanding people than in the processes of budgeting.** Budgets are prepared in order to try to guide the organisation towards its objectives. Yet, there is no doubt that some budgets are even more harmful to the organisation than if none were drawn up at all. The main cause of such a mismatch between a budget and the organisation is a failure to consider the human side of budgeting.

### Activity 38.1

What does this statement concerning the harm budgets may bring to an organisation remind you of from earlier chapters?

Budgets are drawn up for control purposes, that is, they represent an attempt to control the direction in which the organisation is moving. Many people, however, look upon budgets, not as a guide, but as a straitjacket. Let's look at a few undesirable actions that can result from people regarding budgets as a straitjacket rather than as a guide.

- 1 A sales manager refuses to let a salesman go to Sweden in response to an urgent and unexpected request from a Swedish firm. The reason: the overseas sales expenses budget has already been spent. The result: the most profitable order that the company would have received for many years is lost to a competitor.
- 2 The factory manager turns down requests for overtime work on a job because the budgeted overtime has already been exceeded. The result: the job is not completed on time and the company has to pay a large sum under a penalty clause in the contract.
- 3 Towards the end of the accounting period, a manager realises that she has not spent all of her budget for a particular item. She is worried that failing to do so will result in a cut in her budget for the next accounting period. As a result, she launches on a spending spree, buying many completely unnecessary items. The result: a lot of unusable and unnecessary equipment.
- 4 The staff training budget has been spent early in the year. As a result, the human resources manager will not let anyone go on courses for the rest of the year. The result: the company starts to fall behind in a fast-changing industry which is highly dependent on advanced technology, the staff concerned become disillusioned (as they know they need to 'keep up') and the better ones start to look for jobs in other companies which are more responsive to the need to allow personnel to keep in touch with changing technology.

Studies have shown that the more that managers are brought into the budgeting process, then the more successful budgetary control is likely to be. A manager on whom a budget is imposed is likely to pay less attention to the budget and use it less wisely in the control process compared to a manager who had an active part in the drafting of his budget.

Having sounded the warning that needs to be borne in mind constantly when budgeting, we can now look at the positive end of budgeting – the advantages of a good budgetary control system.

## 38.3 Budgets, planning and control

The methodology of budgetary control is probably accounting's major contribution to the process of management. Before we get down to the actual mechanics of preparing a budget, we will first look briefly at the main steps involved in drafting a budget.

When budgets are being prepared, two principal objectives must be uppermost in the mind of top management. Budgets exist in order to implement:

- 1 **Planning.** This means a properly co-ordinated and comprehensive plan *for the whole business*. Each part *must* interlock with the other parts.
- 2 **Control.** Just because a plan is set down on paper does not guarantee that the plan will be followed automatically and that there will be no deviations from it. Control is needed to ensure a plan is followed and control is exercised via the budgets, thus the term 'budgetary control'. To achieve real control, the responsibility of managers and budgets must be so linked that the manager responsible for a certain part of the plan is given a guide to help her produce the desired results and, also, that the actual results achieved are then compared against the expected results, i.e. actual compared with budget.

### 38.4 Preparation of estimates and the sales budget

The first budget that should be prepared is the sales budget. However, before doing so, the first thing to establish when preparing a budget is what limiting factors exist that affect it. For example, it may well be that sales cannot be pushed above a certain amount, or it might be that the company could sell as much as it can produce, but productive capacity is limited. There is no doubt that identification of the limiting factors is crucial if an achievable budget is to be set. There would not, for instance, be much point in budgeting for the sale of 1,000 units a year if production could not manufacture more than 700; or in budgeting to manufacture 2,000 units a year if only 1,300 of them could be sold.

The most difficult estimate to make when preparing a company's budget is that of sales volume and, then, sales revenue. This can be done using one of two methods:

- (1) Make a statistical forecast on the basis of the economic conditions relating to the goods sold (e.g. how demand reacts to price changes) and what is known about the actions of competitors.  
This approach has an *external* rather than an *internal* focus. When adopted, it tends to be performed at a high level in the organisation, with relatively little consultation involving employees actually engaged in the selling process.
- (2) The alternative approach uses information gathered lower down in the organisation. This is usually done by asking each salesperson, or group of salespeople, to estimate the sales in their own areas, and then adding together all the estimates.

If you have studied, or are studying economics, you will find it very useful in helping you understand some of the issues mentioned above. In particular, a knowledge of elasticity of demand; whether the product is a complementary product (e.g. the price of egg-cups is linked to the demand for eggs; or whether it is a substitute (e.g. a rise in the price of butter may induce consumers to use butter substitutes instead), is very relevant. Factors such as whether the company has a monopoly dominance of its market; whether the company has many small customers, a few large customers, or just one large customer, are all of crucial importance. When estimating sales revenue all relevant economic factors must be considered.

The sales budget is, however, more than just a forecast of sales volume and sales revenue. **Budgets should show the actions that management is taking to influence future events.** If an increase in sales is desired, the sales budget may show extra sales, which may well also indicate that management is going to attempt to increase sales by means such as extra television advertising, making a better product, or giving retailers better profit margins.

Now, let's look at another key budget, the production budget.

## 38.5 The production budget

**The production budget must be compatible with the sales budget.** However, some other factors are also highly relevant, such as the level of stock of finished goods which will be held by the business.

If sales are at the same level over the year, production can be too and the stock figure can remain constant. For example, if a company sells 50 units every month, it can produce 50 units per month. In almost every business, a minimum stock level will have to be maintained, the quantity of stock being dependent on factors such as the amount of storage space, the estimated amount needed to cater for breakdowns in production or for delays in receiving raw materials, etc. The minimum level of stock to be held is a separate issue from the level of production. Consequently, whether the stock level was to be a minimum of 70 units, 100 units or any other level, production in the above example would be 50 units per month.

On the other hand, sales may not be constant. For example, sales may *average* 50 units per month, but the monthly figures may be as follows:

January	20 units	February	30 units	March	60 units
April	80 units	May	70 units	June	40 units

If production levels were kept at 50 units per month, there would be a shortage of 10 units in May – when 70 were demanded but only 60 were available for sale (10 left over from April plus 50 produced in May). An extra 10 units would need to be held to cover this shortfall. If production each month is to be the same, 10 units would need to be held in stock at the start of the year.

Any calculation of minimum stock levels must include these 10 units. For example, if minimum stock of 100 is required, stock at the beginning of the year would need to be 110 units, otherwise stocks at the end of May would only be 90, not 100.

However, instead of producing the same number of units each month, the monthly production could be set to equal the sales figures. If a minimum stock level of 100 units is required, the number of units held at the beginning of the year would then be 100.

We can now compare the two levels of production in Sections 38.6 and 38.7.

## 38.6 Even production levels

The problem here is to find the stock level that the business would need on 1 January if (a) sales are as shown, (b) the stock must not fall below 100 units, and (c) production is to be 50 units per month.

The stock level can be found by trial and error. For example, if you decided to see what would happen if the business had 100 units in stock on 1 January, you would find that after adding production and deducting sales each month, the stock level would fall to 90 units in May. As 100 units of stock is the minimum, you would need to start off on 1 January with 110 units.

The method simply requires that you start off your calculation with an estimated figure of stock at the start of the period, which must not be less than the minimum stock level, and then find the lowest figure of stock during the period. If this is, for example, 10 units less than the minimum stock required, go back and add 10 units to the stock to be held at the start. If the lowest figure is 30 units less than required add 30 units to the opening stock, and so on. Let's look at this in Exhibit 38.1.

**Exhibit 38.1**

<i>Units</i>	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
Opening stock	110	140	160	150	120	100
Add Units produced	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>
	160	190	210	200	170	150
Less Sales	( 20)	( 30)	( 60)	( 80)	( 70)	( 40)
Closing stock	<u>140</u>	<u>160</u>	<u>150</u>	<u>120</u>	<u>100</u>	<u>110</u>

**Activity 38.2**

Sales are expected to be: January 70, February 40, March 50, April 120, May 140 and June 70. The stock level must not fall below 120 units, which is the level at the end of May, and an even production flow of 80 units is required. What stock level would have to have been held on 1 January?

In many organisations, it is felt to be more important to ensure a smooth production flow than to bother unduly about stock levels. They simply assume that the minimum stock level is always attained. If the work is skilled, the labour force may take several years to become trained, and skilled labour in many industries does not take kindly to being sacked and re-employed as the demand for the goods they produce fluctuates. Of course, there are exceptions. For example, in the building industry, bricklayers may go to a builder until they have completed a contract such as building a college, a hospital or a housing estate, and then leave and look for another employer.

On the other hand, a skilled engineer concerned with the manufacture of, say, diesel engines would not expect to be fired and re-employed continuously. The bricklayer has a skill that is easily transferable to many other building employers in an area, whereas the diesel engineer may have only one firm within fifty miles of her home where she can perform her skills properly. A person employed as a labourer might work on a building site in one part of the year and in a brewery during the rest of the year.

Whether a business could carry on production with widely uneven production levels depends so much on the type of firm and the type of labour involved. A business would only sack skilled labour which it needed to rehire soon afterwards if it could persuade them to come back when required. If the people who had been sacked were likely to find other employment, and not return to their previous employer when required, they they would probably be kept on the payroll instead of being temporarily sacked. Production could continue but stocks of finished goods would begin to pile up.

Many businesses do accept their social obligations by only laying off workers when no other reasonable alternative exists. In some organisations, there are probably more workers from time to time than are actually needed – this is known as ‘organisational slack’ so that there is a leeway between the increasing of production and having to take on extra workers.

**38.7 Uneven production levels**

Some organisations, by their very nature, have uneven production levels, and this is accepted by their labour force. An ice-cream firm would find its sales at their highest levels in summer, tailing off in winter. It is not really possible to build up stocks of ice-cream very much in the winter for summer sales. Even if it could be done, the costs of refrigerating large quantities of ice-cream



for several months could hardly be economical. The large labour force used in the summer months probably includes quite a few students occupying their vacation periods profitably, who are not able to work at the job all the year round, even if they wanted to. Such a business will normally have a far stronger relationship between its current stock levels and current sales than one which has even production levels.

The calculation of the quantity to be produced in any one period is:

$$\text{Units sold} - \text{Opening stock} + \text{Closing stock} = \text{Units produced}$$

This can also be stated as:

$$\text{Opening stock} + \text{Units produced} - \text{Units sold} = \text{Closing stock}$$

Thus, if the opening stock is 80 units, units sold are expected to be 100, and the desired closing stock is 50 units, the quantity to be produced becomes:

	Units
Opening stock	80
Add Production	<u>?</u>
	<u>?</u>
Less Sales	(100)
Closing stock	<u>50</u>

Production will, therefore, be the missing figure, i.e. 70 units (80 + production 70 = 150 for sale less actually sold 100 = closing stock 50).

Exhibit 38.2 shows the units to be produced if the following information is known: stock required 1 January 40, at end of each month, January 60, February 110, March 170, April 100, May 60, June 20. Sales are expected to be January 100, February 150, March 110, April 190, May 70, June 50.

### Exhibit 38.2

Units	January	February	March	April	May	June
Opening stock	40	60	110	170	100	60
Production required (?)	<u>120</u>	<u>200</u>	<u>170</u>	<u>120</u>	<u>30</u>	<u>10</u>
	160	260	280	290	130	70
Less Sales	(100)	(150)	(110)	(190)	(70)	(50)
Closing stock	<u>60</u>	<u>110</u>	<u>170</u>	<u>100</u>	<u>60</u>	<u>20</u>

Linked with the production budget will be a materials purchase budget. It may well be that an order will have to be placed in January, received in March and issued to production in April. The purchase of materials will have to be planned as scientifically as possible.

#### Activity 38.3

What is the relationship between the sales budget, the production budget and the materials purchase budget?

## 38.8 Stock control

In your earlier studies of accounting, you probably examined the different methods by which stocks are valued – see, for example, *Frank Wood's Business Accounting 1*, tenth edition, Chapter 29. Apart from valuation of stock, accountants are also interested in knowing if the quantity of stocks being carried is greater than it need be.

Let's look at what makes this information interesting – excessive stocks can have a detrimental effect upon the financial results of a business:

- 1 Money tied up in unnecessarily large stocks is not earning anything. If, therefore, an extra £1 million is tied up unnecessarily in stocks, the money which could have been earned from utilising that extra £1 million somewhere else has been lost. If a 10 per cent return could have been earned on that money, the unnecessary stocks have cost £100,000 a year, even before the cost of storing this excess stock is considered.
- 2 Too much stock needs extra storage space. Therefore the rent for the extra space, heating, lighting, insurance, wages of extra storekeepers, etc. is all money being spent for no benefit.

One thing that anyone should look for when examining the affairs of a business is to see if stocks are larger than they need be. For someone controlling a business, there are three commonly used methods of cutting down on unnecessarily high stocks:

- 1 **Economic order quantity (EOQ).** This is a mathematical method which finds the lowest amount of stock that should be ordered at a time so that the costs of purchasing and holding stock are minimised.

The formula for this is:

$$EOQ = \sqrt{\frac{2CO}{S}}$$

where:

**C** = consumption (usage) per annum in units

**O** = cost of placing one order

**S** = cost of storage and holding of one unit per year

S includes the costs of operating the stores where the stock is kept, transport and insurance, and also the costs concerned with interest on capital which has been invested in stock.

Exhibit 38.3 shows an example of the calculation.

### Exhibit 38.3

Annual consumption = 800 units

Cost of reordering = £4

Storage and holding costs per unit = £1

$$EOQ = \sqrt{\frac{2 \times 800 \times 4}{1}} = \sqrt{\frac{6,400}{1}} = 80 \text{ units per order (i.e. 10 orders per year)}$$

- 2 **Just-in-time (JIT).** This has been seen as one of the major factors which have resulted in the success of Japanese manufacturers over the last 20 or so years. It is not just an approach which is concerned with stock levels, but that is part of it.

The JIT approach requires that delivery of materials should occur immediately before their use. If arrangements are made with suppliers for more frequent deliveries then stocks can be cut to a minimum. Getting suppliers to inspect the materials before they deliver them, and getting them to guarantee their quality, also cuts down on costs, including the need to keep larger stocks in case there are deficiencies.

This sort of service is obtained by giving more business to fewer suppliers, and also placing longer-term orders. This enables the supplier to plan ahead more effectively to give you a better service.

- 3 **Optimised production technology (OPT).** The object of this new approach to the management of production is to distinguish between 'bottleneck' and 'non-bottleneck' resources. To give

an example, the 'bottleneck' resource might be a machine which has a limited capacity. As a result, everything else can only be operated at that same level. Rather than other parts of the business produce more than the 'bottleneck' machine can absorb, a lower overall level of activity takes place. This needs fewer stocks.

Of course if a 'bottleneck' can be eliminated it will be. The above applies when a bottleneck, for whatever reason, cannot be eliminated.

It is better to have a smooth-running business, operating within its 'bottleneck' capacities, than to have one which operates very irregularly. One run irregularly would have to have parts of the business shut down at times. One running smoothly, besides all the other economies, needs fewer stocks.

**Of these three methods, the existence of a formula which gives a precise and easily justified answer makes EOQ particularly easy to use and, for the same reason, examine. It is a useful aid to management in ensuring that they are making best use of their stock-related resources. Also, because of the precise nature of the calculation, it lends itself to incorporation within a computerised managerial decision support system.**

## Learning outcomes

You should now have learnt:

- 1 That budgets are prepared in order to guide the firm towards its objectives.
- 2 That they should be drawn up within the context of *planning* and *control*.
- 3 Budgets should be drawn up in consultation with those who will be affected by them.
- 4 That while budgets are drawn up for control purposes, a budget should not be seen as a straitjacket.
- 5 That there are a number of methods or techniques available to management wishing to ensure that excessive stocks are not carried by their organisations. These include economic order quantity (EOQ), just-in-time (JIT), and optimised production technology (OPT).

## Answers to activities

**38.1** 'Data which is provided for a particular purpose, and which is completely wrong for the purpose, is worse than having no data at all.' (Section 35.2)

'The wrong kind of costing can be even worse than having no costing at all.' (Section 36.12)

<b>38.2</b> Units	January	February	March	April	May	June
Opening stock	140	150	190	220	180	120
Add Units produced	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>
	220	230	270	300	260	200
Less Sales	( 70)	( 40)	( 50)	(120)	(140)	( 70)
Closing stock	<u>150</u>	<u>190</u>	<u>220</u>	<u>180</u>	<u>120</u>	<u>130</u>

**38.3** The sales budget is used to set the levels of activity required in the production budget which, in turn, is used to set the quantities required to be obtained in the materials purchase budget.

## Review questions

**38.1** Using the data provided below, what production levels should be set for each month?

Units 20X2	Jul	Aug	Sep	Oct	Nov	Dec
(a) Stocks levels wanted at the end of each month	138	156	220	280	232	188
(b) Expected sales each month	160	184	218	264	296	204
(c) The stock level at 1 July, 20X2 will be 148 units.						

**38.2** For the year ended 31 December 20X7, the quantities of units sold are expected to be:

January	330	July	210
February	540	August	290
March	310	September	510
April	450	October	330
May	360	November	450
June	300	December	570

The opening stock at 1 January 20X7 will be 144 units. The closing stock desired at 31 December 20X7 is 150 units.

**Required:**

- What will production be per month if an even production flow is required and stock levels during the year can fall to zero because that minimises the cost of holding stock?
- Given the same information plus the constraint that stock levels must never fall below 80 units, and that extra production will be undertaken in January 20X7 to ensure this happens, what will be the January production figure?

### 38.3A

- For each of the following, state three reasons why a firm may wish to keep:
  - a minimum stock level of finished goods, and
  - an even level of production in the face of fluctuating demand.
- The sales forecast for Douglas & Co for July–December 20X7 is:

	J	A	S	O	N	D
Units	280	200	260	360	400	420

Produce a production budget showing monthly opening and closing stock figures if the firm wishes to maintain an even level of producing 300 units each month, and a minimum stock level of 150 units.

What must the opening stock be at 1 July to achieve this?

- Under what circumstances, in budgetary control, may a firm's productive capacity prove to be its limiting or key factor?

(AQA (Associated Examining Board): GCE A-level)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Cash budgets

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the importance of cash funds to an organisation
- explain what is meant by the term 'cash budget'
- prepare a cash budget
- explain the importance of cash budgeting in the control of cash funds
- explain why a cash budget may be prepared
- explain the difference between profits and cash in the context of organisational survival

## Introduction

In this chapter, you'll learn how to prepare a cash budget, of the advantages of cash budgets and, in the context of business survival, of the relationship between profit, cash and a shortage of cash funds.

### 39.1 The need for cash budgets

**It is no use budgeting for production and for sales if, during the budget period, the business runs out of cash funds.** When talking about cash in budgets we are also usually including bank funds. For that reason, in this book we will not be differentiating between cash and cheque payments or between cash and cheques received.

As cash is so important, a budget is also created for it. As a result, any shortage of cash can be foreseen and action taken in good time to obtain a loan or a bank overdraft to cover the short-fall when it occurs. Bank managers do not like it when one of their customers needs a loan or a bank overdraft without prior warning. If a cash budget had been prepared, the customer would have known well in advance that there would be a need for additional cash funds on a particular date.

The finance needed may not be found by borrowing from a bank or finance house. It may well be a long-term need that can only be satisfied by an issue of shares or debentures. Such issues need planning well in advance, and a cash budget can reveal (a) that they will be needed, (b) how much is needed and (c) when it will be needed.

We can now look at a very simple case. Without being concerned in this first example with exactly what the receipts and payments are for (just to keep things simple at this stage) you can see the dangers that are inherent in not budgeting for cash.

**Exhibit 39.1**

Mr Muddlem had a meeting with his accountant on 1 July 20X3. He was feeling very pleased with himself. He had managed to get some very good orders from customers, mainly because he was now allowing them extra time in which to pay their accounts. Sprite, the accountant, said, 'Can you afford to do all that you are hoping to do?'

Muddlem laughed, 'Why, I'll be making so much money I won't know how to spend it.'

'But have you got the cash to finance everything?' asked Sprite.

'If I'm making a good profit, of course I'll have the cash,' said Muddlem. 'I know the bank manager says that the bank overdraft cannot be more than £1,000, but I doubt if I'll ever need it.'

'Let's not rely on guesses,' says Sprite. 'Let's work it out.'

After an hour's work the following facts emerge.

- (a) Present cash balance (including bank balance) £800.
- (b) Receipts from debtors are expected to be: July £2,000; August £2,600; September £5,000; October £7,000; November £8,000; December £15,000.
- (c) Payments are expected to be: July £2,500; August £2,700; September £6,900; October £7,800; November £9,900; December £10,300.

This is then summarised:

	July	Aug	Sep	Oct	Nov	Dec
	£	£	£	£	£	£
Balance at the start of the month:	800	300	200			
Deficit at the start of the month:				(1,700)	(2,500)	( 4,400)
Receipts	<u>2,000</u>	<u>2,600</u>	<u>5,000</u>	<u>7,000</u>	<u>8,000</u>	<u>15,000</u>
	2,800	2,900	5,200	5,300	5,500	10,600
Payments	<u>(2,500)</u>	<u>(2,700)</u>	<u>(6,900)</u>	<u>(7,800)</u>	<u>(9,900)</u>	<u>(10,300)</u>
Balance at end of the month	300	200				300
Deficit at the end of the month			(1,700)	(2,500)	(4,400)	

'I'm in an awkward position then,' says Muddlem. 'I just cannot borrow £4,400 and it would be stupid for me to try to reduce my sales; and, anyway, I don't really want to as these new sales are very profitable indeed. If only I'd known this, I could have borrowed the money from my brother only last week but he's invested it elsewhere now.'

'Come and see me tomorrow,' says Sprite. 'There may well be something we can do.'

Fortunately for Muddlem his luck was in. He arrived to see his accountant the following morning waving a cheque. 'My wife won £5,000 on a jackpot bingo last night,' he said.

'Thank goodness for that. At least in future you'll learn to budget ahead for cash requirements. You can't be lucky all the time,' says Sprite.

## 39.2 Timing of cash receipts and payments

In drawing up a cash budget, you need to be aware that all the payments made relating to units produced are very rarely made at the same time as production itself. For instance, raw materials might be bought in March, incorporated in goods being produced in April, and paid for in May. On the other hand, the raw materials may have been in stock for some time, bought in January, paid for in February, and used in production the following August.

In contrast, the direct labour part of a product is usually paid for at almost the same time as the unit is produced. Even here, a unit may be produced in one week and the wages paid one week later, so that a unit might be produced on, say, 27 June and the wages for the direct labour involved paid on 3 July.

Similarly, except for supermarkets and retail stores where most of the goods sold are paid for at the time of sale, the date of sale and the date of receipt of cash will not usually be the same. Goods might be sold in May and the money received in August, or even paid for in advance so

that the goods might be paid for in February but the goods not shipped to the buyer until May. This is especially true, at least for part of the goods, when a cash deposit is left for custom-made goods which will take some time to manufacture. A simple example of this would be a made-to-measure suit on which a deposit would be paid at the time of order, the final payment being made when the completed suit is collected by the buyer.

### Exhibit 39.2

A cash budget for the six months ended 30 June 20X3 is to be drafted from the following information.

(a) Opening cash balance at 1 January 20X3 £3,200.

(b) Sales, at £12 per unit, cash received three months after sale: in units.

20X2			20X3								
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
80	90	70	100	60	120	150	140	130	110	100	160

(c) Production: in units.

20X2			20X3								
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
70	80	90	100	110	130	140	150	120	160	170	180

(d) Raw materials used in production cost £4 per unit of production. They are paid for two months before being used in production.

(e) Direct labour, £3 per unit paid for in the same month as the unit is produced.

(f) Other variable expenses, £2 per unit,  $\frac{3}{4}$  of the cost being paid for in the same month as production, the other  $\frac{1}{4}$  paid in the month after production.

(g) Fixed expenses of £100 per month are paid monthly.

(h) A van is to be bought and paid for in April for £800.

Schedules of payments and receipts are as follows:

*Payments* (the month shown in brackets is the month in which the units are produced):

<i>January</i>		£	<i>February</i>		£
Raw materials:	130 (March) × £4	520	140 (April) × £4		560
Direct labour:	100 (January) × £3	300	110 (February) × £3		330
Variable:	100 (January) × $\frac{3}{4}$ × £2	150	110 (February) × $\frac{3}{4}$ × £2		165
	90 (December) × $\frac{1}{4}$ × £2	45	100 (January) × $\frac{1}{4}$ × £2		50
Fixed		100	Fixed		100
		<u>1,115</u>			<u>1,205</u>
<i>March</i>		£	<i>April</i>		£
Raw materials:	150 (May) × £4	600	120 (June) × £4		480
Direct labour:	130 (March) × £3	390	140 (April) × £3		420
Variable:	130 (March) × $\frac{3}{4}$ × £2	195	140 (April) × $\frac{3}{4}$ × £2		210
	110 (February) × $\frac{1}{4}$ × £2	55	130 (March) × $\frac{1}{4}$ × £2		65
Fixed		100			100
Motor van					800
		<u>1,340</u>			<u>2,075</u>
<i>May</i>		£	<i>June</i>		£
Raw materials:	160 (July) × £4	640	170 (August) × £4		680
Direct labour:	150 (May) × £3	450	120 (June) × £3		360
Variable:	150 (May) × $\frac{3}{4}$ × £2	225	120 (June) × $\frac{3}{4}$ × £2		180
	140 (April) × $\frac{1}{4}$ × £2	70	150 (May) × $\frac{1}{4}$ × £2		75
Fixed		100			100
		<u>1,485</u>			<u>1,395</u>

*Receipts:* (the month shown in brackets is the month in which the sale was made):

				£
January	80	(October)	× £12	960
February	90	(November)	× £12	1,080
March	70	(December)	× £12	840
April	100	(January)	× £12	1,200
May	60	(February)	× £12	720
June	120	(March)	× £12	1,440

*Cash Budget*

	Jan	Feb	Mar	Apr	May	June
	£	£	£	£	£	£
Balance from previous month	3,200	3,045	2,920	2,420	1,545	780
Add Receipts (per schedule)	<u>960</u>	<u>1,080</u>	<u>840</u>	<u>1,200</u>	<u>720</u>	<u>1,440</u>
	4,160	4,125	3,760	3,620	2,265	2,220
Less Payments (per schedule)	<u>(1,115)</u>	<u>(1,205)</u>	<u>(1,340)</u>	<u>(2,075)</u>	<u>(1,485)</u>	<u>(1,395)</u>
Balance carried next month	<u>3,045</u>	<u>2,920</u>	<u>2,420</u>	<u>1,545</u>	<u>780</u>	<u>825</u>

### 39.3 Advantages of cash budgets

These can be said to be:

- 1 Having to think ahead and plan for the future and express plans in figures, **focuses the mind** in a way that thinking in a general fashion about the future will not do – a general optimistic feeling that ‘all will be well’ often fails to stand up to scrutiny when the views of the future are expressed in a cash budget.
- 2 Seeing that money will have to be borrowed at a particular date will mean that **you can negotiate for a loan in advance**, rather than at the time when you have actually run out of cash. Bankers and other lenders do not like someone attempting to borrow money in a panic.

When borrowing money, you have to give the lender the confidence that the loan will be repaid at the agreed time, plus any interest and charges that may accrue. Last-minute borrowing, unsupported by any calmly thought-out plan, will not inspire such confidence, and will often lead to the loan's being refused as the lender may think that the risk is too great.

#### Activity 39.1

What other disadvantages do you think there might be in waiting until the last minute to arrange a loan of this type?

- 3 Knowing about the need to borrow in advance also **widens the possible pool of lenders**. Such people as friends, relations and businesspeople or investors other than bankers rarely have large sums of cash quickly available. They need time to turn their own investments into cash before they can lend to you.
- 4 Alternatively, you may find that you will have cash funds surplus to requirements. Knowing this in advance **enables you to carefully investigate how you can invest this surplus cash until required**, thus earning interest or other investment income. Surplus cash lying in bank current accounts very often earns absolutely no interest at all, no matter how large the amount. Banks often offer deposit accounts linked to current accounts that automatically transfer funds from one to the other so that any surplus fund in the current account are moved immediately to the deposit account and reversed back to the current account when required.



There are also other sorts of short-term investments which banks and accountants can advise businesses to put their surplus cash into at appropriate times.

### 39.4 Profits and shortages of cash funds

As you've just learnt, making good profits does not mean there cannot be a shortage of cash funds. But, how can this happen? Let's look at how some businesses may have good profits and yet still be short of cash funds, possibly having bank overdrafts or loans which are getting steadily bigger.

- 1 A has increased its sales by 50 per cent. It is making the same percentage gross profit and its expenses have hardly increased, yet its overdraft has got bigger. The reason is that it increased its sales by giving all of its customers four months to pay instead of the usual one month. This has attracted a lot of new customers.

This means that the debtors are increasing by very large amounts, as they can wait another three months in which to pay their bills. Thus, the equivalent of three months' cash receipts have not come into the bank. Meanwhile, the firm is making extra purchases for goods for the new customers, with a consequent outflow of more cash than usual, especially if it has not got longer credit terms from its suppliers. So, hardly any cash is coming in in the short term, while more cash than usual is going out.

The answer to this is: large increase in profits and fewer cash funds probably resulting in higher bank overdrafts or loans.

- 2 B has the same sales, purchases and expenses as usual. However, the proprietor is now taking much higher drawings than before. In fact, his drawings are exceeding the profits he is making.

Such a situation cannot go on for ever. He will start to find his cash funds in the business are decreasing, possibly meaning higher loans or overdrafts being needed.

- 3 C has just spent a lot of money on fixed assets. It will be several years before the firm recoups the money it has paid out. In the meantime, only the depreciation provisions are charged against profits. However, the cash funds have seen the disappearance of the whole amount paid for fixed assets.

The net result is that profits may be recorded but the firm is hard-up for cash funds.

- 4 D is going through a bad patch in that sales are very difficult to make, but it does not want to get rid of any of its workforce. Production is kept going at normal rates, and the products not sold are simply kept in stock. Thus the stock is increasing at an alarming rate.

If stock is not being sold, then cash is obviously not being received in respect of such production. Meanwhile, all the expenses and wages are still being paid for. This can result in a severe shortage of funds if carried on for long unless further finance is received.

- 5 A long-term loan has been paid off but no extra finance from anywhere else has been received. This could equally apply to a partner retiring and the balance due to him being paid out of the firm's funds, without a new partner being introduced. A company buying back its shares without a new issue of shares could face the same situation.

In the long term, there is a connection between profits and cash funds available, even though it may not be that marked. In the short term, you can see that there may be no relationship at all. This simple fact is one that surprises most people. It is because the calculation of profits follows one set of concepts, whereas the calculation of cash funds follows a completely different set of rules.

**Go back to Section 27.7 for a discussion on overtrading.**

## Learning outcomes

You should now have learnt:

- 1 The difference between profit and cash funds.
- 2 When undertaking a cash budget, 'cash' includes both money held in the form of cash and amounts held in the bank.
- 3 The importance of cash funds to an organisation.
- 4 What is meant by the term 'cash budget'.
- 5 The importance of preparing and monitoring a cash budget.
- 6 How to prepare a cash budget.
- 7 The difference between profits and cash in the context of organisational survival.

## Answer to activity

- 39.1** It is not only that you risk the loan being refused. Lenders will often realise that they have you at their mercy, and will charge much higher rates of interest and impose other conditions than they would otherwise have done.

## Review questions

**Advice:** Cash budgeting is an extremely important part of accounting. Questions on this topic are relatively easy to do, and high marks can be gained quite easily.

**39.1** Took comes to see you in March 20X6. He is full of enthusiasm for a new product that he is about to launch on to the market. Unfortunately his financial recklessness in the past has led him into being bankrupt twice, and he has only just been discharged by the court from his second bankruptcy.

'Look here, laddie,' he says, 'with my new idea I'll be a wealthy man before Christmas.'

'Calm down,' you say, 'and tell me all about it.'

Took's plans as far as cash is concerned for the next six months are:

- (a) Present cash balance (including bank) £200.
- (b) Timely legacy under a will – being received on 1 April, 20X6, £10,000. This will be paid into the business bank account by Took.
- (c) Receipts from debtors will be: April £800; May £8,000; June £16,000; July £24,000; August £18,000; September £10,000.
- (d) Payments will be: April £200; May £10,000; June £22,000; July £40,000; August £24,000; September £14,000.

**You are required:**

- (a) To draw up a cash budget, showing the balances each month, for the six months to 30 September 20X6.
- (b) The only person Took could borrow money from would charge interest at the rate of 70 per cent per annum. This is not excessive considering Took's past record. Advise Took.

**39.2** Draw up a cash budget for F. Jack showing the balance at the end of each month, from the following information for the six months ended 31 December 20X4:

- (a) Opening cash (including bank) balance on 1 July 20X4 £3,600
- (b) Production in units:





20X4										20X5	
March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	
720	810	900	960	1,050	1,110	1,140	1,020	930	780	750	

- (c) Raw materials used in production cost £15 per unit. Of this, 90 per cent is paid in the month of production and 10 per cent in the month after production.  
 (d) Direct labour costs of £24 per unit are payable in the month of production.  
 (e) Variable expenses are £6 per unit, payable 40 per cent in the same month as production and 60 per cent in the month following production.  
 (f) Sales at £60 per unit:

20X4										20X5	
Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov		
780	600	960	870	1,200	900	1,050	1,200	1,170	1,200		

Debtors to pay their accounts three months after that in which sales are made.

- (g) Fixed expenses of £1,200 per month payable each month.  
 (h) Machinery costing £6,000 to be paid for in September 20X4.  
 (i) Will receive a legacy of £7,500 in November 20X4.  
 (j) Drawings will be £900 per month.

### 39.3 Herbert Limited make a single product, whose unit budget details are as follows:

	£	£
Selling price		30
Less Costs		
Direct material	9	
Direct labour	4	
Direct production expenses	6	
Variable selling expenses	4	
		(23)
Contribution		<u>7</u>

*Additional information:*

- 1 Unit sales are expected to be:

June	July	August	September	October
1,000	800	400	600	900

- 2 Credit sales will account for 60 per cent of total sales. Debtors are expected to pay in the month following sale for which there will be a cash discount of 2 per cent.  
 3 Stock levels will be arranged so that the production in one month will meet the next month's sales demand.  
 4 The purchases of direct materials in one month will just meet the next month's production requirements.  
 5 Suppliers of direct materials will be paid in the month following purchase.  
 6 Labour costs will be paid in the month in which they are incurred. All other expenses will be paid in the month following that in which they are incurred.  
 7 Fixed expenses are £2,000 per month and include £180 for depreciation.  
 8 The bank balance at 1 July 20X9 is £3,900 favourable to the business.

#### Required:

- (a) A cash budget for Herbert Limited for the three month period ending on 30 September 20X9 showing the balance of cash at the end of each month.  
 (b) List and explain **three** ways in which the preparation of a cash flow budget could be of advantage to the management of Herbert Limited.

(AQA (Associated Examining Board): GCE A-level)

**39.4A** Mtoto Ltd operate as wholesale 'cash and carry' stores and in addition to its main store have two other depots. The company's summarised balance sheet as at 31 August 20X1 was as follows.

	£	£		£	£
<i>Fixed assets</i>			<i>Authorised and issued capital</i>		
(at net book value)		549,600	450,000 £1 Ordinary shares		
<i>Current assets</i>			Fully paid		450,000
Stock	399,900		Retained earnings at		
Trade debtors	<u>21,000</u>		1 Sept 20X0	300,000	
		420,900	Less Current year ended		
			31 Aug 20X1 loss	(130,000)	
					170,000
			<i>Current liabilities</i>		
			Trade (and other)		
			creditors	110,500	
			Bank overdraft	<u>240,000</u>	
					<u>350,500</u>
		<u>970,500</u>			<u>970,500</u>

- Over the past year the company has experienced increased competition and as a consequence reported a net trading loss for the year ended 31 August 20X1.
- The company has decided that in the new financial year tighter control must be exercised over cash resources.

The following information is available:

- All goods are purchased by the main store.

Purchases 20X1						
Actual			Forecast			
July	Aug		Sept	Oct	Nov	Dec
£	£		£	£	£	£
55,800	61,200		64,300	41,000	46,000	41,800

- Mtoto Ltd pays suppliers two months after the month of purchase.
  - Forecast purchases are being reduced since the managing director regarded current stock levels as too high.
  - In addition, shop-soiled stock which cost £20,000 is to be sold for cash in October. It is anticipated that this stock will be sold for £17,000. This sale is not included in the sales of note 2 below.
- All sales are on a cash basis only except for several important customers who trade only with Mtoto's main store.

Sales 20X1							
	Actual			Forecast			
	July	Aug		Sept	Oct	Nov	Dec
	£	£		£	£	£	£
Main store							
Cash sales	21,500	21,600		18,000	26,300	19,200	24,700
Credit sales	24,000	21,000		32,500	26,000	25,400	27,800
Depot 1	15,500	17,400		19,700	18,000	17,600	17,900
Depot 2	21,000	24,000		26,300	19,700	21,000	19,100

- Mtoto Ltd pays £9,500 fixed overhead costs per month.
- Wages and salaries are paid each month through a centralised payroll system.

Wages and salaries 20X1				
Actual		Forecast		
Aug	Sept	Oct	Nov	Dec
£	£	£	£	£
16,000	17,000	19,000	13,000	12,000



In October, 10 staff were made redundant and are to receive their redundancy compensation of £12,000 in December. This amount is not included in the above figures.

- 5 Other variable overhead charges are paid by Mtoto Ltd in the month following the month they are incurred.

**Variable overhead charges 20X1**

<i>Actual</i>	<i>Forecast</i>			
<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
£	£	£	£	£
5,600	6,800	6,100	7,400	6,900

- 6 Plant surplus to requirement is to be sold in September for £26,500 cash. The plant cost £55,000 and depreciation to date is £20,000.

**Required:**

- A detailed cash budget, on a month by month basis, for the first four months of the financial year ending 31 December 20X1 for Mtoto Ltd.
- A report commenting on:
  - the current and forecast liquidity position.
  - the action that Mtoto Ltd could take to attempt a return to a profit situation.

(AQA (Associated Examining Board): GCE A-level)

**39.5** David Llewelyn has been advised by his bank manager that he ought to provide a forecast of his cash position at the end of each month. This is to ensure that his cash inputs will be sufficient to allow a bank loan to be repaid when due and to check that his outgoings are properly controlled. It is estimated that at 30 June 20X0 his current account will be £5,000 in credit, whereas the amount owing in respect of the bank loan taken out on 1 July 20X5 will be £15,000. Monthly deductions from the current account balance amount to £242 including interest charges on account of this loan. In addition to these outgoings, David has to allow for the following:

- The payment of wages of £2,000 per month.
- Personal drawings of £500 per month.
- On average David earns a margin of 15 per cent (of sales) and expects to sell stocks purchased in the previous month. Of the sales in any one month, 20 per cent are paid for within that month, 70 per cent the following month and the remainder two months after sale. Other receipts from debtors are expected to be £40,000 in July 20X0, £32,000 in August 20X0 and £4,000 in September 20X0.
- Purchases of supplies will amount to £38,250 per month from July 20X0 payable one month in arrears. In addition, purchases of £7,500 to increase stocks will be delivered in September 20X0 and must be paid for in October 20X0. Creditors of £34,000 for purchases made in June 20X0 are to be paid in July 20X0.
- Monthly payments to the Inland Revenue for the taxation of his employees' earnings will amount to £500 per month.
- Rent which has to be paid quarterly in advance amounts to £5,000 per annum. These payments commenced in January 20X0.
- Business rates are to be paid in two instalments as due in October 20X0 and in March 20X1. This estimated expenditure will amount to £4,500 per annum.
- Payment of Value Added Tax to H.M. Customs and Excise of £5,000 in July 20X0 and every third month thereafter (but see also (ix)).
- David intends to purchase a van for £8,150 in August 20X0. He will then be entitled to deduct £1,050 from the VAT payment due to H.M. Customs and Excise in October 20X0.

**Required:**

A forecast cash flow statement in columnar form showing the estimated current account balance at the close of each of the four months ending 31 October 20X0.

(Welsh Joint Examining Board: GCE A-level)

**39.6** The managing director of Pumpkin Ltd was reviewing the results of the company for the financial year ended 31 March 20X0. The following summarised information was available:

<i>Balances as at 1 April 20X9</i>	£
Issued ordinary share capital:	
£1 fully paid shares	150,000
Share premium account	100,000
Balance of retained earnings	40,000
<i>Balances as at 31 March 20X0</i>	
Net profit for year 20X9/X0	70,000
Fixed assets	300,000
Bank overdraft	150,000
Other net current assets	210,000

*Note:* There were no other accounts with balances. The balances as at 1 April 20X9 had remained unchanged throughout the year.

The managing director was pleased that the company had made a good profit, but he was rather concerned that a healthy bank balance at the beginning of the year had now become a large bank overdraft.

Consequently he asked the company accountant to prepare forecast information for 20X0/X1 in order that the cash situation could be improved.

The following information was prepared by the accountant:

<b>1</b> Company sales – March 20X0	£
Cash sales	30,000
Credit sales	65,000

In each month April to September (inclusive) the sales per month would be:

	£
Cash sales	40,000
Credit sales	70,000

All credit sales are settled the month after the sale.

- 2** All goods purchased are from a single supplier. The goods are purchased on credit and each month's purchases are paid for three months after the month of purchase.

The following purchase schedule had been prepared for the first 9 months of 20X0:

	<i>January</i>	<i>February</i>	<i>March</i>
Purchases	£60,000	£58,000	£61,000
Purchases in April, May and June			
£55,000 in each month			
Purchases in July, August and September			
£45,000 in each month			

*Note:* The company had successfully negotiated lower prices from its supplier commencing 1 July 20X0.

- 3** Dividends would be paid as follows:

- (i) Final ordinary dividend of 5p per share payable on 31 May 20X0 in respect of financial year 20X9/X0.
- (ii) Interim ordinary dividend of 2p per share payable on 31 July 20X0 in respect of financial year 20X0/X1.

- 4** Selling and distribution expenses are expected to be 6 per cent of a given month's total sales. They are paid one month in arrears.





5 Administration charges would be incurred as follows:

20X0 February, March, April	£10,000 per month
20X0 May to September (inclusive)	£13,500 per month

Administration charges are settled two months after the month in which they were incurred.

6 The company had decided to make a bonus issue of shares of one share for every three held. The issue would be made on 30 April 20X0. The bonus shares would not qualify for the final dividend of 20X9/X0, but would qualify for the interim dividend to be paid on 31 July 20X0.

**Required:**

- Comment on the liquidity of the company as at 31 March 20X0 and explain to the managing director why a company can apparently make a good profit but have no cash in the bank.
- Prepare a cash budget for each of the four months ending 31 July 20X0.
- Comment on the forecast bank balance as shown by your cash budget. Identify ways in which the bank overdraft could be reduced over the last five months of 20X0.

(AQA (Associated Examining Board): GCE A-level)

**39.7A** Belinda Raglan owns a clothing factory. Trading over the last two years has been very successful and she feels that having achieved good results it is now time to request an increase in the overdraft facility.

- In the past the bank has been willing to offer business overdraft facilities and at present there is an agreed limit of £15,000.
- On 1 May 20X4 the overdraft stands at £5,000.
- In order to support her request for the increased facility, she has produced a forecast profit statement for the four months ended 31 August 20X4 as follows:

	May		June		July		August	
	£000	£000	£000	£000	£000	£000	£000	£000
Sales		74		28		116		168
Cost of sales		51		12		78		101
Gross profit		23		16		38		67
Less Rent	4		4		4		4	
Other expenses	8		3		10		14	
Depreciation	5		5		5		5	
		(17)		(12)		(19)		(23)
Net profit		6		4		19		44

Although Belinda thought these figures would be sufficient to satisfy the requirements of the bank, the manager has asked for a cash budget for the period concerned to be submitted.

The following additional information concerning the business is available.

- Rent is paid quarterly in advance on the first day of May, August, November and February.
- All other expenses are payable in the month in which they are incurred.
- Purchases for the period are expected to be – May £60,000; June £120,000; July £40,000 and August £43,000. These will be paid for in the month of purchase. Purchases will be unusually high in May and June because they will be subject to a special reduction of 3% of the amounts quoted.
- 80% of the sales are on a credit basis payable two months later. Sales in March and April were £88,000 and £84,000 respectively.
- A compensation payment of £10,000 to a former employee for an industrial injury, not covered by insurance, is due to be paid in May.

**Required:**

- Prepare a forecast cash budget on a month by month basis for the period May to August 20X4.
- Discuss the advantages and disadvantages of cash budgeting.

- (c) Draft notes, to be used by the bank manager for a letter to Ms Raglan, indicating why the request for an increased overdraft facility may be refused.

(AQA (Associated Examining Board): GCE A-level)

**39.8A** Ian Spiro, formerly a taxi-driver, decided to establish a car-hire business after inheriting £50,000.

His business year would be divided into budget periods each being four weeks.

He commenced business on a Monday the first day of period 1, by paying into a business bank account £34,000 as his initial capital.

All receipts and payments would be passed through his bank account.

The following additional forecast information is available on the first four budget periods of his proposed business venture.

- 1 At the beginning of period 1 he would purchase 6 saloon cars of a standard type; list price £6,000 each, on which he had negotiated a trade discount of 11 per cent.
- 2 He estimates that four of the cars will be on the road each Monday to Friday inclusive, and at weekends all six cars will be on the road. Hire charges as follows:

Weekday rate £10 per day per car

Weekend rate £18 per day per car

He estimates that this business trading pattern will commence on the Monday of the second week of period 1, and then continue thereafter.

All hire transactions are to be settled for cash.

*Note:* a weekend consists of Saturday and Sunday. All remaining days are weekdays.

- 3 An account was established with a local garage for fuel, and it was agreed to settle the account two periods in arrear. The forecast gallon usage is as follows:

Period 1	Period 2	Period 3	Period 4
200	200	400	500

The fuel costs £1.80 per gallon.

- 4 Servicing costs for the vehicles would amount to £300 per period, paid during the period following the service. Servicing would commence in period 1.
- 5 Each of his vehicles would be depreciated at 25 per cent per annum on a reducing balance basis.
- 6 Fixed costs of £200 per period would be paid each period.
- 7 He had agreed with a local firm to provide two cars on a regular basis, Monday to Friday inclusive, as chauffeur driven cars. The agreed rate was £60 a day (per car), payment being made in the following period.

This contract would not commence until the first day of period 2, a Monday.

- 8 Drawings: Periods 1 and 2: £400 a period.

Periods 3 and 4: £800 a period.

- 9 Wages and salaries:

(a) Initially he would employ 3 staff, each on £320 a budget period. Employment would commence at the beginning of period 1.

(b) On commencement of the contract the two additional staff employed as chauffeurs would each receive £360 a budget period. Payments are to be made at the end of the relevant period.

- 10 In anticipation of more business being developed he planned to buy a further three cars for cash in period 4. The cars would cost £6,500 each and it was agreed he would be allowed a trade discount of 10 per cent.

**Required:**

- (a) A detailed cash budget for the first four budget periods.
- (b) An explanation as to why it is important that a business should prepare a cash budget.
- (c) Identify how a sole proprietor may finance a forecast cash deficit distinguishing between internal and external financial sources.

(AQA (Associated Examining Board): GCE A-level)



# Co-ordination of budgets

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the benefits of budgeting to an organisation
- explain the importance of effective co-ordination of budgets for the organisation
- prepare a master budget
- describe the benefits of operating a system of flexible budgeting.

## Introduction

In this chapter, you'll learn about the process of preparing a budget and of how budgets are co-ordinated and used to monitor and identify deviations between them and actual performance. You'll also learn about the importance of investigating these differences and of the benefits of adopting a system of flexible budgeting as compared to budgets being set that remain fixed during the entire period they cover.

### 40.1 Master budgets

Once prepared, all the various budgets have to be linked together to draw up a **master budget**, which is really a budgeted set of financial statements. We have looked at the sales, production and cash budgets. However, many more budgets are typically prepared, including:

- a selling budget
- an administration expense budget
- a manufacturing overhead budget
- a direct labour budget
- a purchases budget
- a capital expenditure budget

and so on. In this book, we do not wish to get entangled in too many details, but in a real business with a proper set of budgeting techniques there will be a great deal of detailed computations behind the figures that are incorporated in the budgets.

It may be that when all the budgets have been co-ordinated, or slotted together, the master budget shows a smaller profit than the directors are prepared to accept. This will mean recasting budgets to see whether a greater profit can be earned and, if at all possible, the budgets will then be altered. Eventually, there will be a master budget that the directors can agree to. This then gives the target for the results that the business hopes to achieve in financial terms. **Remember,**

there are other targets, such as employee welfare, product quality, etc., that cannot be expressed in financial terms but which will impact upon and influence the setting of budgets.

The rest of this chapter is concerned with the drawing up of budgets for an imaginary firm, Walsh Ltd, culminating in the drawing up of the master budget.

Let's start with a look at the balance sheet of Walsh Ltd, as at 31 December 20X4. This gives us our opening figures for stocks of raw materials, stocks of finished goods, cash (including bank) balance, creditors, debtors, etc. Next, we'll produce budgets for the six months ending 30 June 20X5.

Walsh Ltd Balance Sheet as at 31 December 20X4			
<i>Fixed assets</i>	<i>Cost</i>	<i>Depreciation</i>	
	<i>£</i>	<i>to date</i>	<i>Net</i>
		<i>£</i>	<i>£</i>
Machinery	4,000	1,600	2,400
Motor vehicles	<u>2,000</u>	<u>800</u>	<u>1,200</u>
	<u>6,000</u>	<u>2,400</u>	<u>3,600</u>
<i>Current assets</i>			
Stocks: Finished goods (75 units)		900	
Raw materials		500	
Debtors (20X4 October £540 + November £360 + December £450)		1,350	
Cash and bank balances		<u>650</u>	
		<u>3,400</u>	
<i>Less Current liabilities</i>			
Creditors for raw materials (November £120 + December £180)	300		
Creditors for indirect manufacturing expenses (December)	<u>100</u>		
		( 400)	
Net current assets			<u>3,000</u>
			<u>6,600</u>
<i>Financed by:</i>			
Share capital: 4,000 shares £1 each			4,000
Profit and loss			<u>2,600</u>
			<u>6,600</u>

The plans for the six months ended 30 June 20X5 are as follows:

- (a) Production will be 60 units per month for the first four months, followed by 70 units per month for May and June.  
 (b) Production costs will be (per unit):

	<i>£</i>
Direct materials	5
Direct labour	4
Variable overhead	<u>3</u>
	<u>12</u>

- (c) Fixed indirect manufacturing expenses are £100 per month, payable always one month in arrears.  
 (d) Sales, at a price of £18 per unit, are expected to be:

	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
No. of units	40	50	60	90	90	70

- (e) Purchases of direct materials (raw materials) will be:

	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
<i>£</i>	<i>£</i>	<i>£</i>	<i>£</i>	<i>£</i>	<i>£</i>	<i>£</i>
	150	200	250	300	400	320

- (f) The creditors for raw materials bought are paid two months after purchase.  
 (g) Debtors are expected to pay their accounts three months after they have bought the goods.  
 (h) Direct labour and variable indirect manufacturing expenses are paid in the same month as the units are produced.  
 (i) A machine costing £2,000 will be bought and paid for in March.  
 (j) 3,000 shares of £1 each are to be issued at par in May.  
 (k) Depreciation for the six months: machinery £450; motor vehicles £200.

We must first of all draw up the various budgets and then incorporate them into the master budget. Some of the more detailed budgets which can be dispensed with in this illustration will be omitted.

#### Materials Budget (£s)

	January	February	March	April	May	June
Opening stock	500	350	250	200	200	250
Add Purchases	150	200	250	300	400	320
	650	550	500	500	600	570
Less Used in production:						
Jan–April $60 \times £5$	(300)	(300)	(300)	(300)		
May and June $70 \times £5$					(350)	(350)
Closing stock	<u>350</u>	<u>250</u>	<u>200</u>	<u>200</u>	<u>250</u>	<u>220</u>

#### Production Budget (in units)

	January	February	March	April	May	June
Opening stock	75	95	105	105	75	55
Add Produced	60	60	60	60	70	70
	135	155	165	165	145	125
Less Sales	( 40)	( 50)	( 60)	( 90)	( 90)	( 70)
Closing stock	<u>95</u>	<u>105</u>	<u>105</u>	<u>75</u>	<u>55</u>	<u>55</u>

#### Production Cost Budget (£s)

	January	February	March	April	May	June	Total
Materials cost	300	300	300	300	350	350	1,900
Labour cost	240	240	240	240	280	280	1,520
Variable indirect manufacturing expenses	<u>180</u>	<u>180</u>	<u>180</u>	<u>180</u>	<u>210</u>	<u>210</u>	<u>1,140</u>
	<u>720</u>	<u>720</u>	<u>720</u>	<u>720</u>	<u>840</u>	<u>840</u>	<u>4,560</u>

#### Creditors Budget (£s)

	January	February	March	April	May	June
Opening balance	300	330	350	450	550	700
Add Purchases	150	200	250	300	400	320
	450	530	600	750	950	1,020
Less Payments	(120)	(180)	(150)	(200)	(250)	( 300)
Closing balance	<u>330</u>	<u>350</u>	<u>450</u>	<u>550</u>	<u>700</u>	<u>720</u>

#### Debtors Budget (£s)

	January	February	March	April	May	June
Opening balances	1,350	1,530	2,070	2,700	3,600	4,320
Add Sales	720	900	1,080	1,620	1,620	1,260
	2,070	2,430	3,150	4,320	5,220	5,580
Less Received	( 540)	( 360)	( 450)	( 720)	( 900)	(1,080)
Closing balances	<u>1,530</u>	<u>2,070</u>	<u>2,700</u>	<u>3,600</u>	<u>4,320</u>	<u>4,500</u>

### Cash Budget (£s)

	January	February	March	April	May	June
Opening balance	650	550	210			1,050
Opening overdraft				(2,010)	(2,010)	
Received						
(see schedule)	<u>540</u>	<u>360</u>	<u>450</u>	<u>720</u>	<u>3,900</u>	<u>1,080</u>
	1,190	910	660	(1,290)	1,890	2,130
Payments						
(see schedule)	( <u>640</u> )	( <u>700</u> )	( <u>2,670</u> )	( <u>720</u> )	( <u>840</u> )	( <u>890</u> )
Closing balance	<u>550</u>	<u>210</u>			<u>1,050</u>	<u>1,240</u>
Closing overdraft			(2,010)	(2,010)		

### Cash Payments Schedule (£s)

	January	February	March	April	May	June
Creditors for goods bought two months previously	120	180	150	200	250	300
Fixed indirect manufacturing expenses	100	100	100	100	100	100
Direct labour	240	240	240	240	280	280
Variable indirect manufacturing expenses	180	180	180	180	210	210
Machinery	<u>640</u>	<u>700</u>	<u>2,000</u> <u>2,670</u>	<u>720</u>	<u>840</u>	<u>890</u>

### Cash Receipts Schedule (£s)

	January	February	March	April	May	June
Debtors for goods sold three months previously	<u>540</u>	<u>360</u>	<u>450</u>	<u>720</u>	900	<u>1,080</u>
Shares issued					<u>3,000</u>	
					<u>3,900</u>	

**Master Budget**  
**Forecast Operating Statement for the six months ended 30 June 20X5**

	£	£	£
Sales			7,200
Less Cost of goods sold:			
Opening stock of finished goods		900	
Add Cost of goods completed		<u>4,560</u>	
		5,460	
Less Closing stock of finished goods		( <u>660</u> )	
			(4,800)
Gross profit			2,400
Less			
Fixed indirect manufacturing expenses		600	
Depreciation: Machinery	450		
Motors	<u>200</u>		
		650	
			(1,250)
Net profit			1,150

## Forecast Balance Sheet as at 30 June 20X5

<i>Fixed assets</i>	<i>Cost</i>	<i>Depreciation to date</i>	<i>Net</i>
	£	£	£
Machinery	6,000	2,050	3,950
Motor vehicles	<u>2,000</u>	<u>1,000</u>	<u>1,000</u>
	<u>8,000</u>	<u>3,050</u>	<u>4,950</u>
<i>Current assets</i>			
Stocks: Finished goods		660	
Raw materials		220	
Debtors		4,500	
Cash and bank balances		<u>1,240</u>	
		6,620	
<i>Creditors: amounts falling due within 1 year</i>			
Creditors for goods	720		
Creditors for indirect manufacturing expenses	<u>100</u>		
		( 820)	
<i>Net current assets</i>			<u>5,800</u>
<i>Total assets less current liabilities</i>			<u>10,750</u>
<i>Capital and reserves</i>			
Called-up share capital			7,000
Profit and loss (2,600 + 1,150)			<u>3,750</u>
			<u>10,750</u>

## 40.2 Capital budgeting

You'll have noticed that the cash budget included £2,000 for the machine paid for in March. The other side of the double entry will also have been entered in a budget – the **capital expenditure budget**. This is where all the plans for the acquisition of fixed assets such as machinery, buildings, etc. are entered. Management will evaluate the various possibilities open to it, and will compare the alternatives. This is a very important part of budgeting. However, for the purposes of demonstrating how budgets are co-ordinated, we shall stick to the budgets we have demonstrated in this example. Suffice to say that the process for the capital expenditure budget and other budgets omitted from the detail of this example is broadly similar to those you have seen so far.

## 40.3 The advantages of budgeting

The process of preparing budgets, including the involvement of employees in all areas of the organisation, and finally producing a profit plan, is a regular feature in all but the smallest businesses. Very often, this is the one period each year when the various parts of management can really get together and work as a team rather than as separate parts of an organisation.

### Activity 40.1

What is it that you learnt about earlier in this book which involved all the functional areas and departments across the organisation that needs to be 'right' if appropriate budgets are to be agreed?

When budgeting is conducted under favourable conditions, there is no doubt that **an organisation which uses budgeting will tend to perform rather better than a similar business that does not**. Using budgeting means that managers can no longer give general answers affecting the running of the business. They have to express their plans in financial terms and they know that, in the end, their estimated figures are going to be compared with what the actual figures turn out to be.

It has often been said that **the act of budgeting is possibly of more benefit than the budgets that are produced**. However, the following benefits can be claimed for good budgeting:

- 1 **The strategic planning carried out by the board of directors or owners can be more easily linked to the decisions made by managers concerning how the resources of the business will be used to try to achieve the objectives of the business.** The strategic plan has to be converted into action, and budgeting provides the ideal device for converting such plans into financial terms.
- 2 **Standards of performance can be agreed for the various parts of the business.** If sales and production targets are set as part of a co-ordinated plan, then the sales department cannot really complain that production is insufficient if they had agreed previously to a production level and this is being achieved. Nor can production complain if its output exceeds the amount it budgeted for and the excess output remains unsold.
- 3 **The expression of plans in comparable financial terms.** Some managers think mainly in terms of, say, units of production, or of tonnes of inputs or outputs, or of lorry mileage, etc. The effect that the actions of each manager has upon financial results must be brought home to them. For instance, a transport manager might be unconcerned about the number of miles that his fleet of lorries covers until the cost of a large mileage is brought home to him, often during budgeting, and it may be then and only then that he starts to search for possible economies. It is possible in many cases to use mathematics to find the best ways of loading vehicles, or to plan routes taken by vehicles so that fewer miles are covered and yet the same delivery service is maintained. This is just one example of many where the expression of the plans of a section of a business in financial terms sparks off a search for economies, when otherwise it may never have started at all.
- 4 **Managers can see how their work slots into the activities of the organisation.** It can help to get rid of the feeling of 'I'm only a number not a person', because they can identify their positions within the organisation and can see that their jobs really are essential to the proper functioning of the business.
- 5 **The budgets for an organisation cannot be set in isolation.** This means that the situation of the business, the nature of its products and its workforce, etc., must be seen against the economic background of the country. For instance, it is no use budgeting for extra labour when labour is in extremely short supply, without realising the implications, such as having to pay higher than normal wage rates. Increasing the sales target during a credit squeeze needs a full investigation of the effect of the shortage of money upon the demand for the firm's goods and so on.

#### Activity 40.2

What disadvantages you learnt about earlier in this book may arise if an organisation's managers are not allowed to vary their activities from budget?

**However, budgets can be mis-used. Too often they are set at one level of sales or production and remain unchanged throughout the budget period when, in fact, flexible budgets ought to be used – see Section 40.5.** Sometimes, budgets are forced upon managers against their will. Instead, a 'selling job' should be conducted to try to convince managers that their budgets are not unreasonable. A trial run for part of a business is often much better than starting off with a fully detailed budget for the whole of the business.

Learning to use budgets is rather like learning to swim. Let a child get used to the water first and remove its fear of the water, then it will learn to swim fairly easily. For most children (but not all), if the first visit to the baths meant being pushed into the deep end immediately, then reaction against swimming would probably set in. In organisations that introduce budgeting for the first time, it is best to let managers become used to the idea of budgeting during a trial period, without the fear of being dealt with severely. Most managers will then accept the idea and participate appropriately and effectively in the budgeting process.

## 40.4 The use of computers in budgeting

Years ago, budgeting was a task which most accountants hated. It was not the concept of budgeting that accountants disliked. Far from it, it suited their needs perfectly. Rather, it was the multitude of numerical manipulations that had to be performed time and time again that made the task both boring and formidable, never mind very prone to errors.

Everyone who has prepared financial statements from a trial balance and a list of adjustments knows the feeling when, after a lot of work, the balance sheet fails to balance. Searching through to find the error(s) can be a daunting prospect. With budgets, the problem is even greater – you do not have anything to tell you if you have made an error. Imagine how much more complicated it is in a real business dealing with real figures, rather than with the simple sets of data which form your exercises. Also, imagine the thoughts going through the head of the accountant in the days before spreadsheets when the managing director said ‘What would happen to net profit if we increased our prices by 5 per cent and took an extra month to pay creditors?’ The accountant would then have to plough his way through a large number of extra calculations.

Most of that is now a thing of the past. Computers are used instead. They either have software specially written for the task, or spreadsheets are used. By keying in the necessary data, the computer will automatically produce the budgets, and any ‘what if’-based amended budgets within a very short space of time.

This enables management to see the results that would be expected from many separate propositions, thus enhancing the chance of choosing the best solution in setting the most acceptable budget. Also, as the accounting period unfolds, the changes that have occurred since the period started can be incorporated very easily so as to adjust (or ‘flex’) the budgets as the accounting period progresses.

Let’s now look at how budgets may be adjusted using a process called ‘flexible budgeting’.

## 40.5 Flexible budgets

So far in this book, budgets have been drawn up on the basis of one set of expectations, based on just one level of sales and production. Inevitably – no one can foretell the future with 100 per cent accuracy – when the actual results are compared with the budgeted results, they will not be identical. This occurs for two reasons:

- 1 While the actual and budgeted volumes of production and sales may be the same there may be a difference between the actual and the budgeted costs.
- 2 The volumes of actual and budgeted units of sales and production may vary. If they do, the costs and revenues will be different because of the different volumes of units involved.

The differences between budget and actual are called ‘**variances**’. Variances coming under (1) above will probably be under the control of the relevant department. On the other hand, variances under (2) are caused because of variations in plans brought about by changing sales, and/or production levels.

Budgets are used for guiding activity and for control. A manager does not take kindly to being held responsible for a variance in her spending if she is working to a fixed budget and the variance is caused by a type (2) occurrence. To avoid this, budgets are created for several levels of volume, to show what costs etc. should arise at each level of activity.

For example, if a budget had been fixed at a volume of 500 units and the actual volume is 550, the production manager would undoubtedly feel aggrieved if his costs for producing 550 units were compared with the costs he should have incurred for 500 units. Budgets which do allow for changing levels are called **flexible budgets**.

To draft a full set of flexible budgets is outside the scope of this book, but an instance of one department's flexible budget for manufacturing overhead is shown in Exhibit 40.1.

### Exhibit 40.1

Data Ltd Budget for Manufacturing Overhead, Department S*					
Units	400	450	500	550	600
	£	£	£	£	£
Variable indirect manufacturing expenses	510	550	600	680	770
Fixed indirect manufacturing expenses	400	400	400	400	400
Total indirect manufacturing expenses (A)	<u>910</u>	<u>950</u>	<u>1,000</u>	<u>1,080</u>	<u>1,170</u>
Direct labour hours (B)	200	225	250	275	300
Overhead rates (A) divided by (B)	£4.55	£4.22	£4.00	£3.92	£3.90

\*In real life, this would be in greater detail and, using a spreadsheet, would be capable of showing the flexed budget for any level of activity.

Notice in Exhibit 40.1 that the variable costs in this case do not vary in direct proportion to production. Once 500 units production have been exceeded, they start to climb rapidly. The flexible budget makes far greater sense than a fixed budget. For instance, if a fixed budget had been agreed at 400 units, with variable overhead £510. If production levels rose to 600 units, the manager would think the whole system unfair if he were expected to incur only £510 variable overhead (the figure for 400 units). On the contrary, if the comparison was on a flexible budget then costs at 600 units production would, instead, be compared with £770 (the budgeted variable overhead at 600 units).

### Learning outcomes

You should now have learnt:

- 1 There are a number of budgets that together comprise the master budget and they must all reconcile to each other and to the master budget.
- 2 That budget preparation is often an iterative process as the master budget is focused more and more tightly to the objectives of the organisation.
- 3 How to prepare a master budget.
- 4 That flexible budgeting permits managers to adjust their budgets in the light of variations in plan, often involving items over which they have no control.

### Answers to activities

- 40.1** The various objectives of each of the functional areas and departments need to be compatible with each other and with the overall goals of the organisation. (Section 34.3)
- 40.2** Budgets that are too rigorously applied generate a situation of inflexibility that can be extremely counterproductive. There must be scope for managers to depart from budget when it is in the best interests of the organisation to do so. (Section 38.2)



## Review questions

**Note:** In many ways, preparing a set of budgeted financial statements is very much like preparing financial statements from single-entry records. However, financial statements prepared from single-entry records are based on facts and concern the past; whereas budgeted financial statements are based on estimates and concern the future.

**40.1** Richard Toms has agreed to purchase the business of Norman Soul with effect from 1 August 20X7. Soul's budgeted working capital at 1 August 20X7 is as follows:

	£	£	£
Current assets			
Stock at cost	13,000		
Debtors	<u>25,000</u>		
		38,000	
Current liabilities			
Creditors	10,000		
Bank overdraft	<u>20,000</u>		
		(30,000)	
			8,000

In addition to paying Soul for the acquisition of the business, Toms intends to improve the liquidity position of the business by introducing £10,000 capital on 1 August 20X7. He has also negotiated a bank overdraft limit of £15,000. It is probable that 10 per cent of Soul's debtors will in fact be bad debts and that the remaining debtors will settle their accounts during August subject to a cash discount of 10 per cent. The opening creditors are to be paid during August. The sales for the first four months of Toms' ownership of the business are expected to be as follows: August £24,000, September £30,000, October £30,000 and November £36,000. All sales will be on credit and debtors will receive a two-month credit period. Gross profit will be at a standard rate of 25 per cent of selling price. In addition, in order to further improve the bank position and to reduce his opening stock, Toms intends to sell on 1 August 20X7 at cost price £8,000 of stock for cash. In order to operate within the overdraft limit Toms intends to control stock levels and to organise his purchases to achieve a monthly rate of stock turnover of 3. He will receive one month's credit from his suppliers.

General cash expenses are expected to be £700 per month.

**Required:**

- A stock budget for the four months ending 30 November 20X7 showing clearly the stock held at the end of each month.
- A cash budget for the four months ending 30 November 20X7 showing clearly the bank balance at the end of each month.

(AQA (Associated Examining Board): GCE A-level)

**40.2A** A company's estimated pattern of costs and revenues for the first four months of 20X7 is as follows:

Cost and Revenues: January–April 20X7 (£000)				
Month	Sales	Materials	Wages	Overheads
January	410.4	81.6	16.2	273.6
February	423.6	84.8	16.8	282.4
March	460.8	93.6	18.3	306.7
April	456.3	91.2	18.6	304.5

- 1 One-quarter of the materials are paid for in the month of production and the remainder two months later: deliveries received in November 20X6 were £78,400, and in December 20X6 £74,800.
- 2 Customers are expected to pay one-third of their debts a month after the sale and the remainder after two months: sales expected for November 20X6 are £398,400, and for December 20X6, £402,600.
- 3 Old factory equipment is to be sold in February 20X7 for £9,600. Receipt of the money is expected in April 20X7. New equipment will be installed at a cost of £38,000. One-half of the amount is payable in March 20X7 and the remainder in August 20X7.
- 4 Two-thirds of the wages are payable in the month they fall due, and one-third a month later: wages for December 20X6 are estimated at £15,900.
- 5 £50,000 of total monthly overheads are payable in the month they occur, and the remainder one month later: total overheads for December 20X6 are expected to be £265,200.
- 6 The opening bank balance at 1 January 20X7 is expected to be an overdraft of £10,600.

**Required:**

- (a) Using the information above, prepare the firm's cash budget for the period January–April 20X7.
- (b) Provide a statement to show those items in part (a) which would appear in a budgeted balance sheet as at 30 April 20X7.

(Edexcel: GCE A-level)

**40.3** F. Tain is opening his first boutique on 1 July 20X2. He is investing £30,000 as capital. His plans are as follows:

- (i) On 1 July 20X2 to buy and pay for premises £60,000; shop fixtures £4,000; motor van £8,000.
- (ii) To employ two assistants, each to get a salary of £130 per month, to be paid at the end of each month. (PAYE tax, National Insurance contributions, etc., are to be ignored.)
- (iii) To buy the following quantities of goods for resale (shown in units):

	July	Aug	Sep	Oct	Nov	Dec
Units	600	660	840	1,050	1,200	990

- (iv) To sell the following number of units of these goods:

	Jul	Aug	Sep	Oct	Nov	Dec
Units	360	540	720	900	1,170	1,260

- (v) Based on similar ventures in shops selling other products, he has decided to sell all goods at the same price – £30. Two-thirds of the sales are for cash, the other one-third being on credit. These latter customers are expected to pay their accounts in the third month following that in which they received their goods.
- (vi) The goods will cost £7 each for July to October inclusive, and £8 each thereafter. Creditors will be paid in the second month following purchase. (Value stock on FIFO basis.)
- (vii) The other expenses of the shop will be £450 per month payable in the month following that in which they were incurred.
- (viii) Part of the premises will be sub-let as an office at a rent of £8,000 per annum. This is paid in equal instalments in March, June, September and December.
- (ix) His cash drawings will be £1,400 per month.
- (x) Depreciation is to be provided on premises at 5 per cent per annum straight-line; shop fixtures at 15 per cent per annum and on the motor van at 25 per cent per annum, both using the reducing balance method.

**You are required to:**

- (a) Draw up a cash budget for the six months ended 31 December 20X2, showing the balance of cash at the end of each month.
- (b) Draw up a forecast trading and profit and loss account for the six months ended 31 December 20X2, and a forecast balance sheet as at that date.





**40.4A** M. Lamb is going to set up a new business on 1 April 20X5. She estimates that her first six months in business will be as follows:

- (i) She will put £60,000 into a bank account for the business on 1 April 20X5.
- (ii) On 1 April 20X5, she will buy machinery for £8,000, a motor van for £6,400 and premises for £35,000, paying for them immediately out of the business bank account.
- (iii) All purchases will be on credit. She will buy £10,000 of goods on 1 April and will pay for these in May. She will purchase another £12,000 of goods in April and £16,000 of goods each month during May, June, July, August, and September. Other than the first £10,000 purchase in April, all other purchases will be paid for two months after purchase.
- (iv) Sales (all on credit) will be £26,000 for April and £28,000 for each month after that. Debtors will pay for the goods in the second month after purchase.
- (v) Stock on 30 September 20X5 will be £8,000.
- (vi) Wages and salaries will be £2,100 per month and will be paid on the last day of each month.
- (vii) General expenses will be £200 per month, payable in the month following that in which they were incurred.
- (viii) She has an endowment assurance policy maturing on 15 July 20X5. She will receive £17,500 on that date and it will be paid into the business bank account immediately.
- (ix) Insurance covering the 12 months to 31 March 20X6 will be paid by cheque on 30 September 20X5, £560.
- (x) Business rates will be paid as follows: for the three months to 30 June 20X5 by cheque on 31 May 20X5; for the 12 months ended 30 June 20X6 by cheque on 31 October 20X5. Business rates are £1,440 per annum.
- (xi) She will make drawings of £1,800 per month by cheque.
- (xii) She has substantial investments in public companies. Her bank manager will give her any overdraft that she may require.
- (xiii) Depreciate premises 5 per cent per annum, van 25 per cent per annum, and machinery 20 per cent per annum, all using the straight line method.

**You are required to:**

- (a) Draft a cash budget (includes bank) month by month showing clearly the amount of bank balance or overdraft at the end of each month.
- (b) Draft the projected trading and profit and loss account for the first six months' trading, and a balance sheet as at 30 September 20X5.

#### 40.5A

(a) What is meant by the terms:

- (i) Budget
- (ii) Operating budget
- (iii) Master budget?

(b) The information below relates to the business of Madingley Ltd:

**Balance Sheet as at 30 May 20X0 (£000)**

	Cost	Aggregate depreciation	Book value
<b>Fixed assets</b>			
Land and buildings	134.00	–	134.00
Plant and machinery	9.40	3.76	5.64
Fixtures and fittings	2.30	1.05	1.25
	<u>145.70</u>	<u>4.81</u>	<u>140.89</u>
<b>Current assets</b>			
Stocks: Raw materials	91.70		
Finished goods	142.40		
Debtors	594.40		
Bank	<u>12.40</u>		
		840.90	
<b>Less Current liabilities</b>			
Creditors: Raw materials	82.20		
Overheads	<u>127.40</u>		
		(209.60)	
<b>Working capital</b>			<u>631.30</u>
			<u>772.19</u>
<b>Financed by:</b>			
Share capital		500.00	
Profit and loss account		<u>272.19</u>	
			<u>772.19</u>

The following is a schedule of the budgeted income and expenditure for the six months ended 30 November 20X0 (£000):

	Sales	Materials	Wages	Overheads
June	193.20	41.20	7.60	123.00
July	201.40	42.40	7.90	119.20
August	216.10	49.60	8.80	131.40
September	200.50	31.40	6.10	91.50
October	190.30	21.20	3.70	59.30
November	183.70	19.80	2.60	42.60

**Notes:**

- (i) Generally, materials are paid for two months after receipt, and customers pay on average after three months.
- (ii) Payments outstanding for materials at 1 June 20X0 were: April £38,500; May £43,700.
- (iii) Debtors were: March £194,300; April £203,600; May £196,500.
- (iv) Wages are to be paid in the month in which they fall due.
- (v) Overheads are to be paid one month after they are incurred: the figure for May was £127,400.
- (vi) Stocks of raw materials are to be kept at £91,700.
- (vii) The stocks of finished goods at 30 November 20X0 are to be £136,200.
- (viii) There are no stocks of semi-finished items on 31 May 20X0, and none are expected in stock on 30 November.
- (ix) Forty per cent of the overheads are to be considered as fixed.
- (x) Depreciation on plant and machinery is to be allowed at 10 per cent *per annum* on cost; the fixtures and fittings are thought to have a value at 30 November of £980.
- (xi) There are no sales of finished goods or purchases of raw materials for cash planned during the period.

**Prepare:**

- (a) A forecast operating statement for the period June to November 20X0; and
- (b) A forecast balance sheet as at 30 November 20X0.

(Edexcel: GCE A-level)





**40.6** The following information has been extracted from the books of Issa Ltd for the financial year ended 31 December 20X0.

**Trading and Profit and Loss Account  
for the year ended 31 December 20X0**

	£000		£000
Opening stock	90	Sales	750
Purchases	490		
	<u>580</u>		
Less Closing stock	80		
Cost of goods sold	500		
Gross profit	<u>250</u>		
	<u>750</u>		<u>750</u>
Administration expenses	60	Gross profit	250
Selling and distribution expenses	50		
Financial charges	20		
Depreciation of fixed assets	20		
Net profit	<u>100</u>		
	<u>250</u>		<u>250</u>

**Balance Sheet as at 31 December 20X0\***

	£000	£000		£000	£000
Fixed assets at cost		750	£1 Ordinary shares fully paid		200
Less Aggregate depreciation		144	9% £1 Preference shares, fully paid		100
		<u>606</u>			
Current assets			Share premium		150
Stock	80		Retained earnings		350
Trade debtors	75				
Less Provision for doubtful debtors	<u>5</u>	70	Current liabilities		
Balance at bank	<u>100</u>	<u>250</u>	Trade creditors	50	
		<u>856</u>	Accrued expenses	<u>6</u>	<u>56</u>
					<u>856</u>

The company had commenced the preparation of its budget for the year ending 31 December 20X1 and the following information is the basis of its forecast.

- 1 An intensive advertising campaign will be carried out in the first six months of 20X1 at a cost of £15,000. It is anticipated that as a result of this, sales will increase to £900,000 in 20X1.
- 2 The gross profit/sales ratio will be increased to 35 per cent.
- 3 A new stock control system is to be installed in 20X1 and it is expected that the stock level will be reduced by £15,000 as compared to the 20X0 closing stock.
- 4 Land and buildings which cost £50,000 (nil depreciation to date) will be sold in 20X1 for £200,000 cash. Half of the proceeds will be used to buy ordinary shares in another company, Yates Ltd, at an agreed price of £4 per share. (Ignore share commission etc.)
- 5 The company planned to capitalise some of its reserves on 1 April 20X1. New ordinary shares are to be issued on a 1 for 2 basis. Half the funds required will be drawn from the share premium account and the remainder will be taken from retained earnings.
- 6 Preference share dividends will be paid on 1 May 20X1 and 1 November 20X1. The company planned to pay an interim ordinary share dividend on the increased share capital of 2.5p per share on 1 July 20X1. No final dividend is proposed.
- 7 Owing to inflation revenue expenses are expected to rise as follows:  
Administration expenses will increase by 6 per cent.  
Selling and distribution expenses will increase by 8 per cent.

The advertising campaign expenses are in addition to the increase above.

Financial charges will increase by 4 per cent.

These percentage increases are based on the figures for the year ended 31 December 20X0.

- 8 With the projected sales increases trade debtors are expected to rise to £100,000 by 31 December 20X1. The provision for doubtful debts is to be adjusted to 7½ per cent of forecast trade debtors.
- 9 Other forecast figures as at 31 December 20X1.

	£000
Balance at bank	350.1
Trade creditors	56.0
Expense creditors	15.0

- 10 Depreciation of 10 per cent per annum on cost is to be provided on £600,000 of the company's fixed assets.

**Required:**

- (a) A budgeted trading, profit and loss and appropriation account for the year ending 31 December 20X1.

Show the full details of the trading account.

- (b) A budgeted balance sheet as at 31 December 20X1.

- (c) What advantages accrue to a business by preparing a budget with respect to
- forecast profitability;
  - forecast liquidity?

(AQA (Associated Examining Board): GCE A-level)

**\*Authors note:** This balance sheet is presented in the rarely used 'horizontal format'. You should find if a simple process to identify or calculate the figures you are used to finding in a vertical balance sheet.

**40.7** The balance sheet of Pies and Cakes Ltd at 30 June 20X8 was expected to be as follows:

**Balance Sheet 30 June 20X8 (£)**

	Cost	Depreciation to date	Net
<i>Fixed assets</i>			
Buildings	300,000	120,000	180,000
Plant and machinery	50,000	30,000	20,000
Motor vehicles	30,000	14,000	16,000
Office fixtures	<u>2,500</u>	<u>1,100</u>	<u>1,400</u>
	<u>382,500</u>	<u>165,100</u>	217,400
<i>Current assets</i>			
Stock: Finished goods (570 units at £12 each)		6,840	
Raw materials		1,500	
Debtors (June 20X8 sales)		9,500	
Cash and bank balances		<u>35,500</u>	
		53,340	
Less: Current liabilities			
Creditors for raw materials (May £300 + June £240)	540		
Creditors for indirect manufacturing expenses	<u>1,050</u>		
		( 1,590)	
			<u>51,750</u>
			<u>269,150</u>
<i>Financed by:</i>			
Share capital			225,000
Profit and loss account			<u>44,150</u>
			<u>269,150</u>



The plans for the six months to 31 December 20X8 can be summarised as:

- (i) Production costs per unit will be:

	£
Direct materials	2
Direct labour	6
Variable indirect manufacturing expenses	4
	<u>12</u>

- (ii) Sales will be at a price of £20 per unit for the three months to 30 September and at £21 subsequently. The number of units sold will be:

	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
Units	300	400	500	500	450	350

All sales will be on credit, and debtors will pay their accounts one month after they bought the goods.

- (iii) Production will be consistent at 450 units per month.

- (iv) Purchases of direct materials – all on credit – will be:

	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
£	£	£	£	£	£	£
1,100	1,000	800	700	700	900	

Creditors for direct materials will be paid two months after purchase.

- (v) Direct labour is paid in the same month as production occurs.  
 (vi) Variable indirect manufacturing expenses are paid in the month following that in which the units are produced.  
 (vii) Fixed indirect manufacturing expenses of £450 per month are paid each month and never in arrears.  
 (viii) A machine costing £2,500 will be bought and paid for in July. A motor vehicle costing £10,000 will be bought and paid for in September.  
 (ix) Debentures of £25,000 will be issued and the cash received in November. Interest will not be charged until 20X9.  
 (x) Provide for depreciation for the six months: Buildings £15,000; Motor vehicles £4,000; Office fixtures £220; Plant and machinery £5,000.

**You are required to draw up as a minimum:**

- (a) Cash budget, showing figures each month.  
 (b) Debtors budget, showing figures each month.  
 (c) Creditors budget, showing figures each month.  
 (d) Raw materials budget, showing figures each month.  
 (e) Forecast operating statement for the six months.  
 (f) Forecast balance sheet as at 31 December 20X8.

In addition, draw up any other budgets which show the workings behind the above budgets.

**40.8** The following information relates to the actual sales of Griffon Ltd during the last four months of its financial year.

	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
Quantity (units)	900	900	900	1,000
Price each	£55	£55	£55	£55

The budgeted information below relates to the next financial year commencing 1 July 20X2:

- (i) The company forecasts that sales quantity will decrease in July by 10 per cent of the level in June. The reduced quantity will remain for August and September, but will then increase by 10 per cent in October, and remain fixed for the next three months.

The sales price will remain at £55 each until 1 September when it will be increased to £60 per unit, this price will be effective for a minimum of six months.

50 per cent of sales are on a cash basis and attract a 2 per cent cash discount, the remaining 50 per cent of sales are paid two months in arrears.

The company arranges its purchases of raw materials such that the closing stock at the end of each month exactly meets the requirement for the following month's sales. Each unit sold requires 2 kg of material at £15 per kg; this price is fixed until December 20X3.

- (ii) As a separate exercise, the managing director asks for stock levels to be reviewed, and asks you about the use of economic order quantities at some time in 20X3. The following budgeted data would apply to this exercise:

Material	2,000 kg per month
Price	£15 per kg
Stockholding costs	20% p.a. on average stock value
Ordering costs	£10 per order

**Required:**

- A. Draw up monthly budgets for the four-month period commencing 1 July 20X2 for:
- Debtors in £s;
  - Raw material purchases in kg.
- B. From the budgeted information given in note (ii) calculate the economic order quantity for the company. Briefly outline the limitations of this ordering method.

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**40.9** Bedford Ltd is a manufacturing business with several production departments. Benjamin Kent, the manager of the machining department, submitted the following figures for the firm's annual budget for his department:

Units produced (normal production level)	64,000
	£
Raw materials	294,400
Direct labour	236,800
Power	38,400
Repairs and maintenance (25% variable at this level of budgeted cost)	51,200
Insurance	1,300
Heating and lighting	1,250
Indirect wages (15% variable at this level of budgeted cost)	64,000
Total cost	<u>687,350</u>
Total capacity for machining department	80,000 units

Actual production for the period is 68,000 units, and costs are:

Materials	310,750
Labour	249,100
Power	39,800
Repairs and maintenance	53,050
Insurance	1,350
Heating and lighting	1,200
Indirect wages	65,250
Total cost	<u>720,500</u>

Benjamin is being criticised for overspending £33,150 compared with his normal budget. It is appreciated that he has made a saving on heating and lighting, but concern is being expressed over the spending on materials and labour. Benjamin feels that he has been able to control the department's costs efficiently.





**Required:**

- A. Construct a flexible budget for 60 per cent, 70 per cent, 75 per cent, 85 per cent and 90 per cent of production capacity, calculate any savings or overspending by Benjamin's department and comment on its efficiency.
- B. Describe the operation of an efficient system of budgetary control.

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**40.10A** The summarised balance sheet of Newland Traders at 30 May 20X7 was as follows:

	£000	£000
Fixed assets at cost		610
Less depreciation		<u>264</u>
		346
Current assets		
Stocks	210	
Debtors	315	
Cash at bank and in hand	<u>48</u>	
	573	
Less Current liabilities		
Creditors	<u>128</u>	<u>445</u>
		791
Capital and reserves		
Issued capital		600
General reserve		150
Profit and loss account		<u>41</u>
		791

Selling and materials prices at 30 May 20X7 provide for a gross profit at the rate of 25 per cent of sales.

The creditors at 30 May 20X7 represent the purchases for May 20X7, and the debtors the sales for April of £150,000 and May of £165,000.

Estimates of sales and expenditure for the six months to 30 November 20X7 are as follows:

- Sales for the period at current prices will be £800,000. Sales for the months of September and October will each be twice those of the sales in each of the other months.
- Stock at the end of each month will be the same as at 30 May 20X7 except that at 30 November 20X7 it will be increased to 20 per cent above that level.
- Creditors will be paid one month after the goods are supplied and debtors will pay two months after the goods are supplied.
- Wages and expenses will be £20,000 a month and will be paid in the month in which they are incurred.
- Depreciation will be at the rate of £5,000 a month.
- There will be capital expenditure of £80,000 on 1 September 20X7. Depreciation, in addition to that given in (v) above, will be at the rate of 10 per cent per annum on cost.
- There will be no changes in issued capital, general reserve or prices of sales or purchases.

**Required:**

- Sales and purchases budgets and budgeted trading and profit and loss accounts for the six months ended 30 November 20X7.
- A budgeted balance sheet as at 30 November 20X7.
- A cash flow budget for the six months ended 30 November 20X7 indicating whether or not it will be necessary to make arrangements for extra finance and, if so, your recommendation as to what form it should take.

Show all your calculations.

(Welsh Joint Education Committee: GCE A-level)

**40.11A** Len Auck and Brian Land trade as partners in Auckland Manufacturing Company making components for minicomputers. To cope with increasing demand the partners intend to extend their manufacturing capacity but are concerned about the effect of the expansion on their cash resources during the build-up period from January to April 20X6.

The following information is available.

- (a) The balance sheet of Auckland Manufacturing Company at 31 December 20X5 is expected to be:

	£	£
<i>Fixed assets</i>		
Plant and machinery at cost		65,000
Less depreciation		<u>28,000</u>
		37,000
<i>Current assets</i>		
Stocks – raw materials	10,500	
– finished goods	18,500	
Debtors	36,000	
Cash at bank	<u>4,550</u>	
	69,550	
<i>Current liabilities</i>		
Creditors	<u>27,550</u>	
		<u>42,000</u>
		<u>79,000</u>
<i>Partners' capital accounts</i>		
Len Auck		40,000
Brian Land		<u>39,000</u>
	£	<u>79,000</u>

- (b) Creditors at 31 December 20X5 are made up of:  
 Creditors for materials supplied in November and December at  
     £13,000 per month 26,000  
 Creditors for overheads 1,550  
   27,550
- (c) New plant costing £25,000 will be delivered and paid for in January 20X6.
- (d) Raw material stocks are to be increased to £12,000 by the end of January 20X6, thereafter raw material stocks will be maintained at that level. Payment for raw materials is made two months after the month of delivery. Finished goods stocks will be maintained at £18,500 throughout the period. There is no work in progress.
- (e) Sales for the four months are expected to be:

	£
January	18,000
February	22,000
March	22,000
April	24,000

Sales for several months prior to 31 December had been running at the rate of £18,000 per month. It is anticipated that all sales will continue to be paid for two months following the month of delivery.

- (f) The cost structure of the product is expected to be:

	%
Raw materials	50
Direct wages	20
Overheads, including depreciation	17½
Profit	<u>12½</u>
Selling price	<u>100</u>



- (g) Indirect wages and salaries included in overheads amount to £900 for the month of January and £1,000 per month thereafter.
- (h) Depreciation of plant and machinery (including the new plant) is to be provided at £700 per month and is included in the total overheads.
- (i) Wages and salaries are to be paid in the month to which they relate; all other expenses are to be paid for in the month following the month to which they relate.
- (j) The partners share profits equally and drawings are £400 per month each.
- (k) During the period to April an overdraft facility is being requested.

**Required:**

- (a) A forecast profit and loss account for the four months January to April 20X6 and a balance sheet as at 30 April 20X6.
- (b) A month by month cash forecast for the four months showing the maximum amount of finance required during the period.
- (c) A calculation of the month in which the overdraft facility would be repaid on the assumption that the level of activity in April is maintained.

For the purposes of this question, taxation and bank interest may be ignored.

*(Association of Chartered Certified Accountants)*

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# STANDARD COSTING AND VARIANCE ANALYSIS



## Introduction

This part looks at how budgetary control can be exercised in a timely manner through the establishment of estimates for cost and income and the subsequent monitoring of those estimates against the actual costs and income as they arise.

<b>41</b>	Standard costing	615
<b>42</b>	Materials and labour variances	620
<b>43</b>	Overhead and sales variances	638



# Standard costing

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the difference between a standard costing system and an actual cost system
- explain the advantages of adopting a standard costing system
- distinguish between ideal standards and attainable standards
- explain the importance of selecting appropriate standards

## Introduction

In this chapter, you'll learn about standard costing, its benefits, and the difference between 'ideal' and 'attainable' standards and of the importance of recognising the difference between them.

### 41.1 Comparison with actual costs

A cost accounting system can be of two types. One which uses *actual* costs or one that uses something called '**standard costs**'. The difference is not in the systems themselves but in the *kind* of costs that are used. In the costing systems already shown, we have seen that they have consisted of the actual costs for direct materials and direct labour, and that overhead has been charged by reference to a predetermined overhead rate. Standard costing uses instead the costs that *should have been incurred*. **So standard costing has costs that should have been incurred, while other systems use costs that have been incurred.**

In a cost accounting system that uses 'actual costs', costs are traced through the records as product costs. On the other hand, **standard costing** uses standards of performance and of costs and prices derived from studying operations and on estimates of future costs and prices. Each unit being produced is given a standard material cost, a standard direct labour cost and a standard overhead cost. As with any form of management accounting, this does not have to be carried out in full. For example, some companies will use *standard* labour and *standard* overhead costs but *actual* material costs. In the rest of this chapter, we will consider organisations that use standard costs for everything.

As with all management accounting tools, the benefits flowing from using standard costing should exceed the costs of doing so. Advantages that may arise as a result of having a standard costing system include:

- 1 **Usually a standard costing system is simpler and needs less work than a costing system based on actual costs.** This is because once the standards have been set they are adhered to, and the standard costs remain unchanged for fairly long periods. Costing systems based on actual costs need constant recalculations of cost. For example, the average cost method of pricing issues of materials needs a recalculation of the price each time there are further receipts, whereas standard cost of materials will remain at a constant figure. This can bring about a reduction in the costs of clerical work.
- 2 **The unit costs for each identical product will be the same, whereas this may not be the same with actual costing systems.** For instance, in an actual cost system two people making identical units may be paid at different wage rates, the materials issued to one person may have come from a slightly later lot of raw materials received which cost more than the previous lot and therefore the issue price may be higher, and so on. In a standard costing system the same amount would be charged for each of these people until such time as the standards were altered.
- 3 **A standard cost system provides a better means of checking on the efficiency with which production is carried on,** in that the differences between the standard costs and the actual costs, i.e. the **variances**, throw up the changes in efficiency.
- 4 **Standard costing increases the speed of reporting.** This is certainly important, as generally the later that information is received the less useful it is. Standard costing has a great deal of pre-determined data when compared with an actual costing system; therefore entering up job order sheets, job sheets and many other tasks can be speeded up if the actual costs do not have to be awaited.

By definition, the costs that flow through a standard costing system are standard costs. As actual costs will normally be different from the equivalent standard costs, the difference (i.e. 'variance') if adverse (i.e. actual costs have exceeded standard costs) is debited to the profit and loss account. If the variance is a favourable one (i.e. actual costs have been less than the standard costs) it is credited to the profit and loss account. This must be done, as all the costs used for the calculation of gross profit, etc. have been standard costs, and if the variances were not put in the profit and loss account then the net profit it shows would not be the net profit actually made.

## 41.2 Setting standards

Standard costing is a classic case of the use of the principle of 'management by exception'. Put roughly, this means that **when things are going according to plan leave them alone, and concentrate instead on the things that are deviating from planned results.** With standard costing, the actual results that conform to the standards require little attention. Instead, management's interest is centred on the exceptions to standards. The approach whereby this information is given to management is known as 'exception reporting'.

**Getting the standard costs, quantities and prices 'right' is, therefore, of prime importance.** If the 'wrong' standards are used, not only will a lot of time and money have been wasted, but they may bring worse results than if no standard had been set at all.

### Activity 41.1

What does this last statement remind you of from earlier chapters?

Standards may be unsuitable because they were not set properly, or because conditions have changed greatly since they were set.

Standards can be of two types:

- 1 **Ideal standards.** These are based on maximum levels of efficiency. They thus represent standards of performance that can rarely, if ever, be attained. Adoption of this type of standard is never appropriate. Quite apart from the unrealistic view it gives of everything, it is misleading and can be demotivating if the standards set are perceived to be unachievable by those employees who are meant to be striving to achieve them.
- 2 **Attainable standards.** It is simple for someone to say that individuals will be motivated to attain standards that they are capable of, that they will not exert very much effort to exceed standards, and that standards outside their capabilities will not motivate them. From this follows the easy conclusion that standards should be neither 'too easy' nor 'too difficult' but should be 'just right'. The difficult part of this is in saying what the 'just right' figures are. There is no doubt that the work of behavioural scientists in this area has brought about a far greater insight into such problems. In a very large firm, such specialists may be members of the team setting the standards.

The standards for materials and for labour can be divided between those which are concerned with (a) prices and (b) quantities. Standard overhead costs are divided between standard variable overhead costs and standard fixed overhead costs. The standard fixed overhead costs will be used in absorption costing only, as marginal costing does not bring the fixed costs into its figures.

#### Activity 41.2

Think back to Activity 41.1. What message have you taken from these four statements:

- 1 'Data which is provided for a particular purpose, and which is completely wrong for the purpose, is worse than having no data at all.' (Section 35.2)
- 2 'The wrong kind of costing can be even worse than having no costing at all.' (Section 36.12)
- 3 'Some budgets that are drawn up are even more harmful to a firm than if none were drawn up at all.' (Section 38.2)
- 4 'If the "wrong" standards are used, not only will a lot of time and money have been wasted, but it may bring worse results than if no standard had been set at all.' (Section 41.1)

### Learning outcomes

You should now have learnt:

- 1 That standard costing is based upon costs that should have been incurred, while other costing systems are based upon actual costs, i.e. costs that have been incurred.
- 2 About the benefits of standard costing.
- 3 That under a standard costing system, management focuses upon the exceptions to the standards.
- 4 That it is essential that the standards adopted are appropriate and attainable.



## Answers to activities

- 41.1** 'Data which is provided for a particular purpose, and which is completely wrong for the purpose, is worse than having no data at all.' (Section 35.2)  
 'The wrong kind of costing can be even worse than having no costing at all.' (Section 36.12)  
 'Some budgets that are drawn up are even more harmful to a firm than if none were drawn up at all.' (Section 38.2)
- 41.2** In order to obtain maximum benefit from costing systems and management accounting systems, it is vital that appropriate data and management accounting techniques are used and that they are used in an appropriate and effective manner. Failure to do this is both directly wasteful of resources and can be not just counterproductive, but harmful to the organisation.

## Review questions

**Note:** This chapter gives background information only. You will not find many computational questions limited to its contents.

**41.1** Rimham plc prepares its budgets annually and as the accountant you are responsible for this task. The following standard data is available:

<i>Material content</i>	<i>Product X</i>	<i>Product Y</i>	<i>Product Z</i>
	<i>kg</i>	<i>kg</i>	<i>kg</i>
Material 1	–	18	24
Material 2	4	14	–
Material 3	12	10	6
Material 4	8	–	18
<i>Material prices</i>	<i>Price per kg</i>		
	<i>£</i>		
Material 1	0.1		
Material 2	0.15		
Material 3	0.25		
Material 4	0.05		
<i>Labour content</i>	<i>Product X</i>	<i>Product Y</i>	<i>Product Z</i>
	<i>hours</i>	<i>hours</i>	<i>hours</i>
Department A	2.5	1.5	3
Department B	2.5	1.5	3
<i>Labour rates</i>	<i>Rate per hour</i>		
	<i>£</i>		
Department A	1.6		
Department B	1.2		
<i>Additional budgeted information</i>			
Direct labour hours	635,000		
Production overheads	£1,143,000		

- Production overheads are absorbed on the direct labour hour rate method.
- Administration and selling overheads are absorbed as a percentage of production cost at the rates of 50 per cent and 25 per cent, respectively.
- Profit is estimated at 12½ per cent on budgeted selling price.
- Sales, at standard selling price, for the following year are budgeted as follows:

<i>Product</i>	<i>£</i>
X	800,000
Y	1,280,000
Z	2,400,000

- In order to meet the needs of an expansion programme the company considers it necessary to increase stocks as follows:

Material 1	90,000 kg
Material 2	36,000 kg
Material 3	42,000 kg
Material 4	54,000 kg
Finished goods	
Product X	5,000 units
Product Y	10,000 units
Product Z	10,000 units

**You are required to prepare the following:**

- A schedule giving a detailed standard cost and standard selling price per unit for **each** product.
- The sales budget in units.
- The production budget in units.
- The direct material purchases budget in both units and value.

*(Northern Examinations and Assessment Board: GCE A-level)*

#### **41.2A** Define the terms:

- standard costing
- standard cost
- standard hours
- variance

*(Edexcel Foundation, London Examinations: GCE A-level)*

**You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)**

# Materials and labour variances

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the difference between a favourable and an adverse variance
- calculate materials usage and price variances
- calculate labour efficiency and wage rate variances
- explain the similarity between the calculation of the materials usage variance and the labour efficiency variance
- explain the similarity between the calculation of the materials price variance and the wage rate variance
- suggest possible explanations for variances

## Introduction

In this chapter, you'll learn about two of the main groups of variances, those relating to materials and labour, and how to calculate them.

### 42.1 Background

**Variance analysis** is a means of assessing the difference between budgeted and actual amounts. These can be monetary amounts or physical quantities.

Properly used, variance analysis can improve the operating efficiency of a business by, first of all, setting up the predetermined standard cost structures and, then, measuring actual costs against them to assess efficiency.

Variance analysis makes use of the principle of management by exception. When things are going according to plan they can be left alone. Management can then concentrate on the things that deviate from the planned results and, as mentioned in Chapter 41, can adopt exception reporting in order to do so.

### 42.2 Adverse and favourable variances

The difference between standard cost and actual cost has already been stated to be a variance. Remember these are classified:

- **Adverse:** actual cost amount *greater* than standard cost amount
- **Favourable:** actual cost amount *less* than standard cost amount.

The use of the words 'adverse' and 'favourable' should not be confused with their meaning in ordinary language. They are technical terms. Whether a variance is 'good' or 'bad' can only be determined after the causes of the variance have been fully investigated and ascertained. For example, the actual cost of a unit of a product may be less than the standard cost because more units than expected were produced, resulting in lower unit costs – a good thing. Alternatively actual cost may be lower because the standard cost was based on an error by the person who calculated it – a bad thing.

## 42.3 Computation of variances

There is a big difference between the *computation* of the variances and their *analysis*. The computation simply requires the use of straightforward formulae. In contrast, the analysis of a variance is a matter requiring a good deal of judgement which, by its very nature, cannot be done in a mechanical fashion.

We can now look at the computation of some variances. There are many variances which can be computed, but we will concentrate on a few of the more important ones. In order that sense can be made of the computations and a reasonable job of analysis done, it will be assumed that the standards set were calculated on a rational basis – i.e. they were appropriate.

**Note:** In the computations of variances which follow, exhibits are used to illustrate the variances which have been calculated. The lines drawn on the exhibits represent:

## Representing standard costs - - - - -

### Representing actual costs .....

Where actual costs and standard costs are the same —. —. —. —. —.

The shaded part(s) in each exhibit represent the variance. The value of each variance can be confirmed by multiplying price by quantity, i.e. it is the area of the shaded rectangle.

## 1 Materials price variances

### Favourable variance

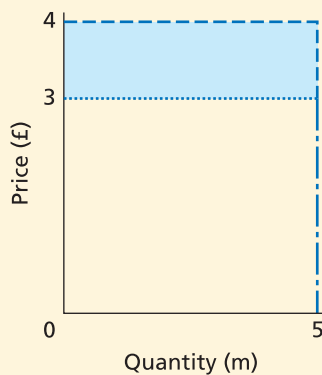
<b>Material J</b>	
Standard price per metre	£4
Standard usage per unit	5 metres
Actual price per metre	£3
Actual usage per unit	5 metres

Usage is the same as standard, therefore the only variance is that of price calculated:

	£
Actual cost per unit £3 × 5	15
Standard cost per unit £4 × 5	<u>20</u>
Variance (favourable)	<u>5</u>

**Exhibit 42.1 shows the £5 variance (represented by the shaded area).** This is the £1 difference in price multiplied by a quantity of 5, therefore the variance is £5. **The variance extends to the price line and not the quantity line, so it is a price variance.**

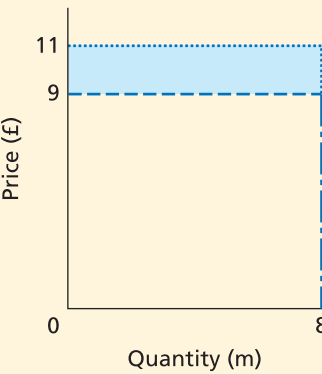
**Exhibit 42.1**



**Adverse variance**

<i>Material K</i>	
Standard price per metre	£9
Standard usage per unit	8 metres
Actual price per metre	£11
Actual usage per unit	8 metres

**Exhibit 42.2**



Variance computed:	£
Actual cost per unit £11 × 8 units	88
Standard cost per unit £9 × 8 units	<u>72</u>
Variance (adverse)	<u>16</u>

The variance is shown in Exhibit 42.2 – £2 times a quantity of 8, i.e. £16. Notice that the shaded area is outside the lines marked ----- representing standard costs.

**Note:** In the exhibits, when the variance is outside the standard cost area as marked by the standard cost lines, it will be an adverse variance. When it is inside the standard cost area as marked by the standard cost lines, it will be a favourable variance.

## 2 Materials usage variances

### Favourable variance

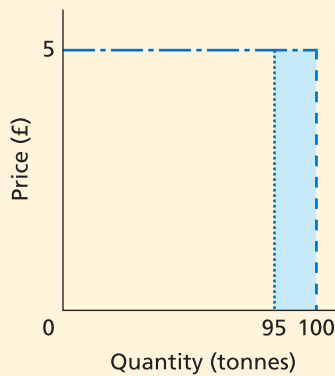
*Material L*

Standard price per tonne	£5
Standard usage per unit	100 tonnes
Actual price per tonne	£5
Actual usage per unit	95 tonnes

Cost is the same as standard, therefore the only variance is that of usage calculated:

	£
Actual cost per unit $£5 \times 95$	475
Standard cost per unit $£5 \times 100$	500
Variance (favourable)	<u>25</u>

**Exhibit 42.3**

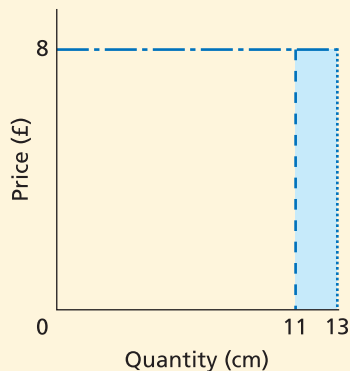


### Adverse variance

*Material M*

Standard price per centimetre	£8
Standard usage per unit	11 cm
Actual price per centimetre	£8
Actual usage per unit	13 cm

**Exhibit 42.4**



Variance computed:	£
Actual cost per unit $£8 \times 13$	104
Standard cost per unit $£8 \times 11$	<u>88</u>
Variance (adverse)	<u>16</u>

Here again the variances for materials L and M are shown in exhibits by means of shaded areas. **The variances extend to the quantity lines and are, therefore, usage variances.** With material L, the variance is shown inside the standard cost area, and is, therefore, a favourable variance, whereas material M shows an adverse variance as it is outside the standard cost area.

### 3 Combinations of materials price and usage variances

Most variances are combinations of both materials price and usage variances. Sometimes one variance will be favourable while the other is adverse; sometimes both will be adverse variances; and at other times both will be favourable variances.

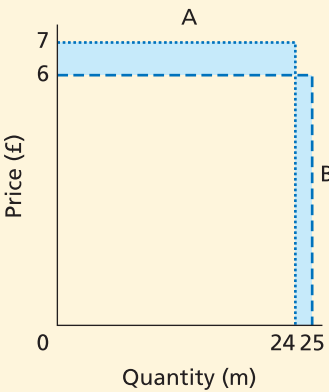
#### Favourable and adverse variances combined

<i>Material N</i>	
Standard price per metre	£6
Standard usage per unit	25 m
Actual price per metre	£7
Actual usage per metre	24 m

The net variance is calculated as:

	£
Actual cost per unit $£7 \times 24$	168
Standard cost per unit $£6 \times 25$	<u>150</u>
Variance (adverse)	<u>18</u>

**Exhibit 42.5**



As Exhibit 42.5 shows, this is in fact made up of two variances. The first variance, shown as the shaded portion A, is an adverse price variance (i.e. it is outside the standard cost lines, therefore actual cost has exceeded standard cost). The second variance, shown as the shaded portion B, is a favourable usage variance (i.e. it is inside the standard cost lines, therefore actual usage has been less than standard usage).

The adverse price variance can therefore be seen to be £1 by a quantity of 24 = £24. The favourable usage variance can be seen to be a length of 1 metre by a price of £6 = £6. The net (adverse) variance is therefore made up:

	£
Adverse material price variance	24
Favourable materials usage variance	<u>6</u>
Net (adverse) variance	<u>18</u>

### Both adverse variances combined

<i>Material O</i>	
Standard price per kg	£9
Standard usage per unit	13 kg
Actual price per kg	£11
Actual usage per unit	15 kg

The net variance is computed:

	£
Actual cost per unit $£11 \times 15$	165
Standard cost per unit $£9 \times 13$	<u>117</u>
Variance (adverse)	<u>48</u>

**Exhibit 42.6**

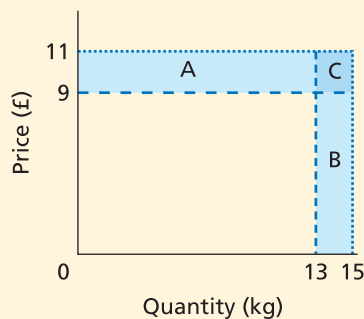


Exhibit 42.6 shows the shaded area A which is definitely a price variance of  $£2 \times 13 = £26$  adverse. Shaded area B is definitely a usage variance of  $2 \times £9 = £18$  adverse. This makes up £44 of the variance, but there is the double-shaded area, C, of  $2 \times £2 = £4$ . This is really an area which is common to both usage and price. Sometimes, although not very often, this would be treated as a separate variance, but as detail is necessarily limited, in this book we will just add it to the price variance, making it  $£26 + £4 = £30$ , the usage variance being left at £18.

### Both favourable variances combined

<i>Material P</i>	
Standard price per tonne	£20
Standard usage per unit	15 tonnes
Actual price per tonne	£19
Actual usage per unit	13 tonnes

The net variance is computed:

	£
Actual cost per unit $£19 \times 13$	247
Standard cost per unit $£20 \times 15$	<u>300</u>
Variance (favourable)	<u>53</u>



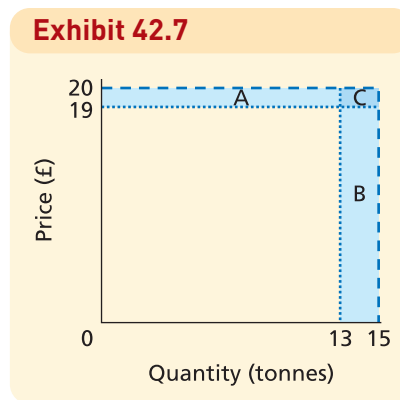
**Exhibit 42.7**

Exhibit 42.7 shows the shaded area A which is definitely a price variance of  $\pounds 1 \times 13 = \pounds 13$  favourable. Shaded area B is a usage variance of  $2 \times \pounds 19 = \pounds 38$  favourable. The double-shaded area C of  $\pounds 1 \times 2 = \pounds 2$ , making up the total variance of 53, would normally be added to the usage variance to make it  $\pounds 38 + \pounds 2 = \pounds 40$ .

## 42.4 Materials variances – analysis

### 1 Price variances

The price variance is a simple one in that it is obvious that the purchasing department has not been able to buy at the anticipated price. How far this is completely outside the powers of the purchasing department depends entirely on the facts. It may simply be that the rate of inflation is far greater than it had been possible to foresee, or that special forms of extra taxes have been introduced by the government. No one can surely blame the purchasing department for not knowing the secrets of the government's budget each year.

On the other hand, it may have been that poor purchasing control has meant that orders for materials have been placed too late for the firm to manage to get the right price in the market, or that materials which ought to have been bought in bulk have, in fact, been bought in small lots at uneconomic prices. If there are regular suppliers, a short-term gain by buying a cheaper lot from somewhere else could militate against the firm's benefit in the long run if the firm's regular suppliers took umbrage.

Buying the cheapest materials does not always result in the greatest possible profit being attained.

#### Activity 42.1

Why do you think this is the case?

In the end, after all the variance analysis has been undertaken, there must be someone to whom the responsibility for the price variance can be traced and who is then accountable for it. However, as Activity 42.1 illustrated, care must be taken not to give praise blindly or to criticise unfairly.

### 2 Usage variances

There are many reasons for excessive use of materials. Inferior materials can bring about a lot of waste, so can workers who are not as skilled as they ought to be. Perhaps the machinery is not

suitable for the job, or there might even be deliberate wastage of material, e.g. wood wasted so that it can be taken home by workers as fuel etc. The theft of material obviously aggravates a usage variance. Here again responsibility must be traced.

### Activity 42.2

When you prepare one of these variance diagrams, there are two simple rules you can use to identify the type (price or usage) and nature (favourable or adverse) of the variance. What are they?

## 42.5 Key questions of variances

Before we look at the computation or analysis of any further variances this is a convenient point to raise some fundamental questions about variances. They are:

- 1 Why do we wish to calculate this particular variance?
- 2 When it has been calculated, what action are we going to take based on it?
- 3 If we are not going to make an effective use of the variance, then why bother to calculate it?

## 42.6 Formulae for materials variances

We have deliberately waited until now to give you the formula for calculating each variance. We wanted you to understand what the variances were, rather than simply give you the formula to calculate them. They are as follows:

$$\begin{aligned}\text{Materials price variance} &= (\text{Standard price} - \text{Actual price per unit}) \times \text{Quantity purchased} \\ &= (\text{SP} - \text{AP}) \times \text{QP}\end{aligned}$$

$$\begin{aligned}\text{Materials usage variance} &= (\text{Standard quantity required} - \text{Actual quantity}) \times \text{Standard price} \\ &= (\text{SQ} - \text{AQ}) \times \text{SP}\end{aligned}$$

## 42.7 Inventory records under standard costing

It is worth noting at this point that when a firm adopts a standard costing system it avoids the difficulties involving FIFO, LIFO or average stock methods. In a standard costing system all materials received and issued are valued at the standard cost in the inventory account. There is no recording problem associated with changing prices during the period since they are separately recorded as variances.

Provided that standards are reviewed sufficiently often this system should ensure that the values of inventories are maintained close to their current value.

## 42.8 Disposition of variances

The question arises as to how the variances are to be brought into the financial statements of the business. There are, in fact, several methods of dealing with them.

They can be treated entirely as costs (if adverse variances) which are period costs and are, therefore, not included in the valuation of closing stocks of finished goods or work in progress. Alternatively they may be brought in as product costs and therefore used in the valuation of closing stocks. Another variation is to treat those variances which are controllable as period costs, but to treat the uncontrollable variances as product costs.

All of these methods are acceptable for the financial statements which are used for external reporting.

**Before you read further, attempt Review Questions 42.1 and 42.2A.**

## 42.9 Costing for labour

Before looking at labour variances, we first need to consider the range of basis upon which labour may be paid. There is no exact definition of 'wages' and 'salaries'. In general, it is accepted that wages are earnings paid on a weekly basis, while salaries are paid monthly.

The methods can vary widely between employers and also as regards different employees in the same organisation. The main methods are:

- 1 Fixed amount salaries or wages – these are an agreed annual amount.
- 2 Piece rate – based on the number of units produced by the employee.
- 3 Commission – a percentage based on the amount of sales made by the employee.
- 4 Basic rate per hour – a fixed rate multiplied by number of hours worked.

Arrangements for rewarding people for working overtime (time exceeding normal hours worked) will vary widely. The rate will usually be in excess of that paid during normal working hours. People being paid salaries will often not be paid for overtime.

In addition, bonuses may be paid on top of the above earnings. Bonus schemes will also vary widely and may depend on the amount of net profit made by the company, or on the amount of work performed or production achieved, either by the whole company or else the department in which the employee works.

**It is important that the nature of payment to the employees is known before attempting to interpret the results of labour variance calculations. There will be significant differences in the possible explanations when employees are on salaries as opposed to basic rate as opposed to overtime, etc.**

## 42.10 Labour variances

The computation of labour variances is similar to that of material variances. With labour variances the analysis can be broken down into:

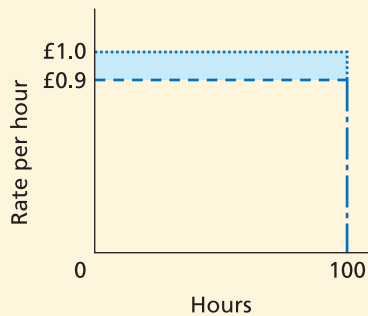
- (a) wage rate variances
- (b) labour efficiency variances.

**Note: As you read and work through this section, you will notice great similarity between the labour variance formulae and the materials variance formulae. In actual fact, the only difference is a terminological one. The wage rate formula is identical in method to the materials price formula; and the labour efficiency formula is similarly identical to the materials usage formula. This is something that students frequently fail to grasp. In effect, it means that you need only learn one of the pairs of formulae, along with the terminology for the other pair. You can then complete any variance computation on both pairs of formulae.**

Because the computation of labour variances is so similar to those of materials variances only a few examples will be given.

### 1 Wage rate variance

<i>Product A</i>	
Standard hours to produce	100
Actual hours to produce	100
Standard wage rate per hour	£0.9
Actual wage rate per hour	£1.0

**Exhibit 42.8**

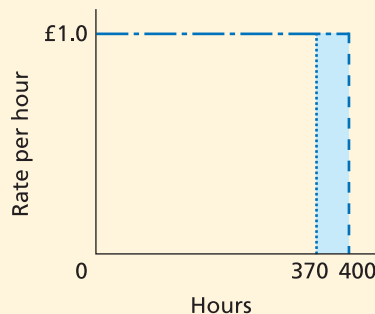
As the actual and standard hours are the same, then the only variance will be a wage rate variance, computed as follows:

	£
Actual cost per unit $£1.0 \times 100$	100
Standard cost per unit $£0.9 \times 100$	<u>90</u>
Variance (adverse)	<u>10</u>

Exhibit 42.8 illustrates this in that the variance is represented by the shaded area. This is £0.1 by a quantity of 100, therefore the variance is £10. The variance extends to the wage rate line and it is thus a wage rate variance, and as the shaded area is outside the standard cost lines, indicated by lines marked — — — — —, then it is an adverse variance.

## 2 Labour efficiency variance

<i>Product B</i>	
Standard hours to produce	400
Actual hours to produce	370
Standard wage rate per hour	£1.0
Actual wage rate per hour	£1.0

**Exhibit 42.9**

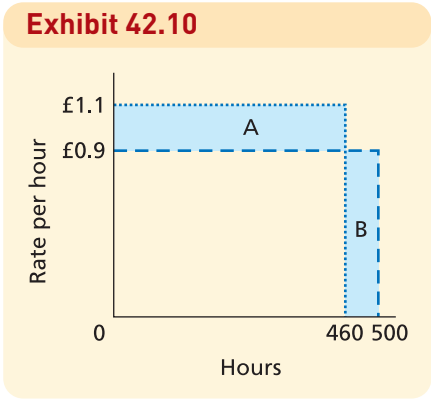
As the actual and standard wage rates are the same, then the only variance will be a labour efficiency variance, computed as follows:

	£
Actual cost per unit $£1.0 \times 370$	370
Standard cost per unit $£1.0 \times 400$	<u>400</u>
Variance (favourable)	<u>30</u>

Exhibit 42.9 illustrates this in that the variance is represented by the shaded area. This is a quantity of 30 by a rate of £1.0, therefore the variance is £30. The variance extends to the time line, therefore this is an efficiency variance, as the job has been completed in a different number of hours from standard. As the shaded area is inside the standard cost lines indicated by lines marked -----, it is a favourable variance.

### 3 Combined wage rate and efficiency variance

<i>Product C</i>	
Standard hours to produce	500
Actual hours to produce	460
Standard wage rate per hour	£0.9
Actual wage rate per hour	£1.1



The net variance can be computed as:

	£
Actual cost per unit $£1.1 \times 460$	506
Standard cost per unit $£0.9 \times 500$	<u>450</u>
Variance (adverse)	<u>56</u>

Exhibit 42.10 shows that this is made up of two variances. The first variance, shown as the shaded portion A, is an adverse wage rate variance (it is outside the standard cost lines, therefore it is an adverse variance because actual cost for this has exceeded standard cost). The second variance, shown as the shaded portion B, is a favourable labour efficiency variance (it is inside the standard cost lines, therefore actual hours have been less than standard hours).

The adverse wage rate variance can, therefore, be seen to be £0.2 by a quantity of 460 = £92. The favourable efficiency variance is a quantity of 40 by a price of £0.9 = £36. The net adverse variance is, therefore, made up of:

	£
Adverse wage rate variance	92
Favourable labour efficiency variance	<u>36</u>
	<u>56</u>

## 42.11 Labour variances – analysis

Labour wage rates will probably be set in conjunction with the trade unions involved, so that this variance may not really be subject to control at any other level other than at the bargaining table with the unions involved. Nevertheless such a variance could arise because a higher grade of labour was being used than was necessary, even taking into account trade union needs. It might reflect a job running behind schedule that had to be finished off quickly even though higher grade labour was used. It might have been a rush job that also meant bringing in a higher grade of labour as well. The staffing policy of the firm may have come adrift because the firm had not recruited sufficient numbers of the various grades of labour.

Labour efficiency variances can be caused by a great number of things. Using unsuitable labour, unsuitable machinery, workers trying to slow work up so that more overtime rates of pay are earned, the day after a bank holiday, or the day before it, can affect performance. The morale of workers, the physical state of workers, using poor materials which slows up production, hold-ups because of bottlenecks in production, and so on. The possibilities are almost endless. At the same time, if the variance was worth calculating, some form of action should follow. Otherwise, there is no point at all in calculating such variances.

## 42.12 Formulas for labour variances

$$\begin{aligned}\text{Wage rate variance} &= (\text{Standard wage rate per hour} - \text{Actual wage rate}) \\ &\quad \times \text{Actual hours worked} \\ &= (\text{SR} - \text{AR}) \times \text{AH}\end{aligned}$$

$$\begin{aligned}\text{Labour efficiency variance} &= (\text{Standard labour hours for actual production} - \text{Actual} \\ &\quad \text{labour hours worked}) \times \text{Standard wage rate per hour} \\ &= (\text{SH} - \text{AH}) \times \text{SR}\end{aligned}$$

Don't forget, if you compare these formulae to the materials variance formulae, you will see that they are actually the same, only the terminology is different, i.e. 'wage rate' instead of 'price'; 'efficiency' instead of 'usage'.

### Learning outcomes

You should now have learnt:

- 1 Variance analysis can improve the operating efficiency of a business by pinpointing items in need of investigation.
- 2 Adverse variances are not necessarily 'bad'. They result from more having been used or spent than was anticipated. Similarly, favourable variances are not necessarily 'good'. It is the reason for the variance, not the effect, that determines whether it is 'good' or 'bad'.
- 3 The materials usage variance formula is identical to the labour efficiency variance formula. Only the terminology differs.
- 4 The materials price variance formula is identical to the wage rate variance formula. Only the terminology differs.

## Answers to activities

- 42.1** Buying cheaply may produce a favourable variance for the purchasing manager. This makes that individual appear efficient. However, doing so may result in poor quality materials being used, resulting in more wastage, a greater amount of labour time because the workers take longer to do the job with inferior materials, and a product made up of poor materials may well damage the image of the firm because its products do not last as long as they used to. This will make the production manager look inefficient. Clearly, it is not fair that the production manager takes the blame while the purchasing manager is congratulated for a job well done. This is one very good reason why it is important that overall variances are broken down into their constituent parts. Only then can blame be attributed to the correct individual and praise given to those that deserve it.
- 42.2** **Rule 1:** if the shaded box is horizontal, it is a price variance; if vertical, it is a usage variance.  
**Rule 2:** if the shaded box lies inside the standard cost line, the variance is favourable; if it lies outside, it is adverse.

## Review questions

**Advice:** Work carefully through Review Questions 42.1 and 42.3. If you have any difficulty, repeat them after 24 hours. Questions on this topic rarely contain any surprises. Once you get used to doing them, you will find they are actually quite easy to answer.

**42.1** Calculate the materials variances from the following data.

(i) Material A:	Standard price per tonne	£10	
	Standard usage per unit	30	tonnes
	Actual price per tonne	£9	
	Actual usage per unit	35	tonnes
(ii) Material B:	Standard price per metre	£15	
	Standard usage per unit	60	metres
	Actual price per metre	£16	
	Actual usage per unit	54	metres
(iii) Material C:	Standard price per metre	£24	
	Standard usage per unit	30	metres
	Actual price per metre	£28	
	Actual usage per unit	38	metres
(iv) Material D:	Standard price per roll	£20	
	Standard usage per unit	31	rolls
	Actual price per roll	£18	
	Actual usage per unit	28	rolls
(v) Material E:	Standard price per kilo	£4	
	Standard usage per unit	280	kg
	Actual price per kilo	£5	
	Actual usage per unit	310	kg
(vi) Material F:	Standard price per litre	£75	
	Standard usage per unit	5,000	litres
	Actual price per litre	£66	
	Actual usage per unit	4,950	litres

**42.2A** Calculate the materials variances from the following data.

(i) Material T:	Standard price per metre	£11	
	Standard usage per unit	176	metres
	Actual price per metre	£11	
	Actual usage per unit	171	metres
(ii) Material U:	Standard price per tonne	£42	
	Standard usage per unit	50	tonnes
	Actual price per tonne	£45	
	Actual usage per unit	50	tonnes
(iii) Material V:	Standard price per litre	£22	
	Standard usage per unit	79	litres
	Actual price per litre	£22	
	Actual usage per unit	83	litres
(iv) Material W:	Standard price per foot	£8	
	Standard usage per unit	41	metres
	Actual price per foot	£10	
	Actual usage per unit	41	metres
(v) Material X:	Standard price per tonne	£29	
	Standard usage per unit	60	tonnes
	Actual price per tonne	£30	
	Actual usage per unit	60	tonnes
(vi) Material Y:	Standard price per kilo	£55	
	Standard usage per unit	84	kg
	Actual price per kilo	£55	
	Actual usage per unit	78	kg

**42.3** Calculate the labour variances from the following data:

	<i>Standard hours</i>	<i>Actual hours</i>	<i>Standard wage rate (£)</i>	<i>Actual wage rate (£)</i>
(i) Job J	440	432	6.00	6.00
(ii) Job K	230	230	5.60	5.80
(iii) Job L	400	480	5.70	5.70
(iv) Job M	280	206	7.00	7.00
(v) Job N	136	136	5.70	5.10
(vi) Job O	60	68	5.60	5.60
(vii) Job P	140	154	5.50	5.50
(viii) Job Q	200	200	5.80	6.10

**42.4A** Calculate the labour variances from the following data:

	<i>Standard hours</i>	<i>Actual hours</i>	<i>Standard wage rate (£)</i>	<i>Actual wage rate (£)</i>
(i) Job a	450	426	5.20	5.60
(ii) Job b	660	680	4.90	4.70
(iii) Job c	150	140	5.30	4.90
(iv) Job d	510	520	5.10	5.40
(v) Job e	420	450	5.20	4.80
(vi) Job f	810	780	4.60	5.00

**42.5** The company for which you are the accountant manufactures three related, but different, products. These are dishwashers, washing machines and refrigerators. Each product has a standard time per unit of production. These are:







dishwashers	10 hours
washing machines	12 hours
refrigerators	14 hours

In the month of March the actual production was:

dishwashers	150
washing machines	100
refrigerators	90

and the labour details were:

actual hours worked	4,100
standard hourly rate of pay	£4
actual wages incurred	£18,450

**You are required to:**

- Explain the term 'standard hour'
- Calculate the standard hours produced in the month of March
- Calculate the following variances, using the above data:
  - total direct labour variance
  - direct labour rate variance
  - direct labour efficiency variance
- Give **two** possible causes for **each** of the labour rate and efficiency variances in (c).

(AQA (Northern Examinations and Assessment Board): GCE A-level)

**42.6A** Central Grid plc manufactures tungsten parts which pass through two processes, machining and polishing, before being transferred to finished goods. The management of the company have in operation a system of standard costing and budgetary control. The standard cost and budget information for April 20X8 has been established by the management accountant as follows:

#### Standard Cost and Budget Details for April 20X8

	<i>Machining</i>	<i>Polishing</i>
Standard cost per unit		
Direct material	£5	–
Direct labour	£12	£4.50
Budgeted output – units	16,000	16,000
(See Note below)		
Budgeted direct labour hours	48,000	24,000

*Note:* Output passes through both processes and there is no opening or closing work in progress.

*Additional information:*

- The actual production costs and details for April 20X8 are as follows:
  - The output that passed through the two processes was 12,000 units and there was no opening or closing work in progress.
  - Direct material used at standard prices was £64,150.
  - Direct material used at actual prices was £60,390.
  - The direct wages bill and the direct labour hours clocked for the machining department were:

	£	Hours
Machining department	153,000	34,000

- Variances for the polishing department have been calculated and reveal the following:

Labour efficiency variance	£3,000 Adverse
Labour rate variance	Nil

**Required:**

- (a) Calculate the total direct materials variance and its analysis into:
  - (i) direct materials usage variance
  - (ii) direct materials price variance.
- (b) Calculate the overall direct labour variance for the machining department and analyse this variance into:
  - (i) direct labour efficiency variance
  - (ii) direct labour rate variance.
- (c) Identify the possible reasons for each of the variances calculated for the machining department in (a) and (b) above and also for the variances given for the polishing department.
- (d) Discuss possible interrelationships between these variances.

(AQA (Associated Examining Board): GCE A-level)

**42.7** Borrico Ltd manufacture a single product and they had recently introduced a system of budgeting and variance analysis. The following information is available for the month of July 20X1:

1	Budget	Actual
	£	£
Direct materials	200,000	201,285
Direct labour	313,625	337,500
Variable manufacturing overhead	141,400	143,000
Fixed manufacturing overhead	64,400	69,500
Variable sales overhead	75,000	71,000
Administration costs	150,000	148,650

**2 Standard costs were:**

Direct labour 48,250 hours at £6.50 per hour.  
 Direct materials 20,000 kilograms at £10 a kilogram.

**3 Actual manufacturing costs were:**

Direct labour 50,000 hours at £6.75 per hour.  
 Direct materials 18,900 kilograms at £10.65 a kilogram.

**4 Budgeted sales were 20,000 units at £50 a unit.**

Actual sales were  
 15,000 units at £52 a unit  
 5,200 units at £56 a unit

**5 There was no work in progress or stock of finished goods.****Required:**

- (a) An accounting statement showing the budgeted and actual gross and net profits or losses for July 20X1.
- (b) The following variances for July 20X1.
  - (i) Direct materials cost variance, direct materials price variance and direct materials usage variance.
  - (ii) Direct labour cost variance, direct labour rate variance and direct labour efficiency variance.
- (c) What use can the management of Borrico Ltd make of the variances calculated in (b) above?

(AQA (Associated Examining Board): GCE A-level)

**42.8A**

- (a) How does a system of standard costing enable a business to operate on the principle of management by exception?
- (b) Some of the following materials and labour variances have been wrongly calculated, although the figures used are correct. Recalculate the variances, showing clearly the formulae you have used, and state whether the variances are adverse or favourable.



→		
(i) <i>Total Materials Variance</i>		
(Standard price – Actual price)		(Standard quantity – Actual quantity)
= (£8.42 – £8.24)		(1,940 litres – 2,270 litres)
= (£0.18)		(–330 litres)
= £59.40 adverse		
(ii) <i>Materials Price Variance</i>		
(Standard price – Actual price)		Standard quantity
= (£8.42 – £8.24)		1,940
= £349.20 favourable		
(iii) <i>Materials Usage Variance</i>		
(Standard quantity – Actual quantity)		Standard price
= (1,940 – 2,270)		£8.42
= £2,778.6 adverse		
(iv) <i>Total Labour Variance</i>		
(Actual hours – Standard hours)		(Actual rate – Standard rate)
= (860 – 800)		(£6.14 – £6.53)
= (60 hours)		(–£0.39)
= £23.4 adverse		
(v) <i>Wage Rate Variance</i>		
(Standard rate – Actual rate)		Actual hours
= (£6.53 – £6.14)		860
= £335.4 favourable		
(vi) <i>Labour Efficiency Variance</i>		
(Actual hours – Standard hours)		Standard rate
= (860 – 800)		£6.53
= £391.80 favourable		

(Edexcel: GCE A-level)

**42.9A** Makers Ltd assembles computer games machines. Standard costs have been prepared as follows:

	<i>Gamesmaster</i>	<i>Gotchya</i>
	£	£
Standard cost:		
<i>Direct material:</i> boards	5	10
components	20	30
<i>Direct labour:</i> assembly	5	5
testing	5	10
Overheads charged at 200%	<u>20</u>	<u>30</u>
	55	85
Profit margin	<u>11</u>	<u>15</u>
Standard selling price	<u>66</u>	<u>100</u>

The standard direct labour rate is £5 per hour.

During May 20X5, 5,000 Gamesmasters were sold at £60 each and 2,000 Gotchyas at £110 each.

Actual costs were incurred as follows:

	£
5,050 Gamesmaster boards	26,000
5,060 sets Gamesmaster components	75,000
2,010 Gotchya boards	28,390
2,025 sets Gotchya components	56,409
10,000 assembly labour hours @ £4.90	49,000
7,000 testing labour hours at £5.10	35,700
Overheads	<u>160,000</u>
	<u>430,499</u>

There are no opening or closing stocks.

**Required:**

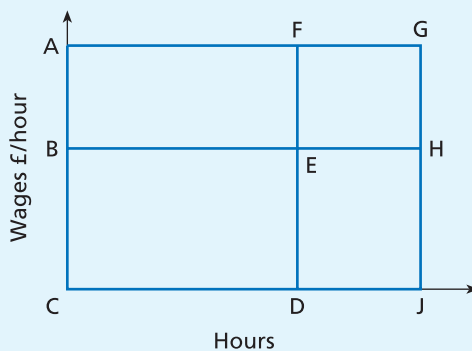
A schedule of direct materials and direct labour variances for the month.

(Welsh Joint Education Committee: GCE A-level)

**42.10A** The following diagram reflects costs under a standard costing system. Assume that all the variances are *unfavourable*. State, with reasons, which rectangle(s) represent:

- (i) the standard cost
- (ii) the actual cost
- (iii) the total labour cost variance
- (iv) the efficiency variance
- (v) the wage rate variance.

(Edexcel: GCE A-level)



You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Overhead and sales variances

## Learning objectives

After you have studied this chapter, you should be able to:

- calculate overhead expenditure variances, volume variances, efficiency variances, and capacity variances
- calculate sales price, volume and mix variances
- describe the similarities between the variable production overhead efficiency variance and both the labour efficiency variance and the materials usage variance
- identify appropriate reasons why variances found have occurred

## Introduction

In this chapter, you'll learn about another two groups of variances: those relating to overheads (both variable and fixed) and sales, and how to calculate them and interpret the results.

### 43.1 Management overheads

In Chapter 37, the problem of allocating overheads (i.e. indirect manufacturing expenses) to jobs or processes was introduced. First, these costs were collected in cost centres. The total costs of each cost centre were then apportioned to products or jobs as they passed through the cost centre.

Suppose a business collects costs into three manufacturing departments, with the result as shown in Exhibit 43.1.

**Exhibit 43.1**

	Department		
	A	B	C
Fixed overhead cost	£ 50,000	£ 40,000	£ 20,000
Variable overhead cost	30,000	35,000	40,000
Total overhead	<u>80,000</u>	<u>75,000</u>	<u>60,000</u>
Direct labour hours	10,000	30,000	15,000
Machine hours	20,000	2,000	15,000

A decision has to be taken as to which activity, either labour hours or machine time, is the *dominant factor* in the department and will, therefore, provide the most appropriate basis for apportioning the overheads to products or jobs manufactured in each department.

**(Note the focus on the 'dominant factor'. This is the key to appropriate selection of the apportionment basis to use.)**

In the case of Department A, machine hours is the dominant factor. Overheads will, therefore, be charged on the basis  $\text{£}80,000/20,000 \text{ hours} = \text{£}4$  per machine hour. The business will record for each job or process the number of machine hours taken and the overheads will be allocated on this total of hours at  $\text{£}4$  per hour.

In Department B, labour is the dominant factor. Overheads will be charged on a labour hour rate calculated at  $\text{£}75,000/30,000 \text{ hours} = \text{£}2.50$  per hour.

Department C does not exhibit any dominant activity and could be expressed in either a machine hour rate or a labour hour rate. Some businesses, where rates of pay in a department are stable and the mix of labour at different rates of pay stays the same, prefer to express the overheads as a percentage of labour cost. In Department C, if the direct labour cost was  $\text{£}75,000$  it could be  $\text{£}60,000/\text{£}75,000 = 80$  per cent. Thus the labour cost for all work going through Department C would be collected and overheads allocated at 80 per cent of the labour cost figure. Alternatively, either the direct labour hours or the machine hours could be used. Both give an overhead rate of  $\text{£}60,000/15,000 = \text{£}4$  per hour.

## 43.2 Predetermined rates

The usual procedure, whether or not standard costing is being used, is to predetermine the overhead absorption rates using budgeted figures for both the overhead costs and the activity measure, whether it be machine or labour hours or something else, such as the direct labour cost. This process has a number of advantages. It not only allows appropriate current estimates to be made for things such as price quotations, but also avoids the problem of overhead rates that fluctuate at different times of the year due to seasonal factors.

For example, an ice-cream manufacturer is likely to be much more active in the summer months than in the winter. Because activity is low in winter, the overhead absorption rate is likely to rise steeply in the winter, as overhead costs will not all reduce proportionately – i.e. they will not all be purely variable in nature. It therefore makes more sense to view the overheads in this type of business on an annual cycle and recover the same amount of overhead throughout the year.

## 43.3 Variances in overhead recovery

In all situations where budgeted figures are used, there are almost certainly going to be variances at the end of a budget period. Let's take figures from Exhibit 43.1 for Department A as the budget, and compare them with actual performance. This is shown in Exhibit 43.2.

The actual machine hours worked of 25,000 will have been used to allocate overheads to production at the rate of  $\text{£}4$  per hour. As a result,  $\text{£}100,000$  will have been allocated. Compared to actual overheads of  $\text{£}89,000$  this represents an overabsorption of  $\text{£}11,000$ . The recovery would only have been exactly equal to actual overhead costs if 22,250 machine hours had been worked, i.e.  $22,250 \times \text{£}4 = \text{£}89,000$ .

Section 42.8 described the treatment of variances identified when standard costing is used. In a cost accounting system *not* using standard costing, any overabsorption or underabsorption of overheads would be either:

- (a) transferred wholly to the profit and loss account for the period;
- (b) allocated between closing inventories and cost of goods sold; or
- (c) carried forward to the next period.

**Exhibit 43.2**

	<i>Department A</i>	
	<i>Budget figures</i>	<i>Actual figures</i>
	£	£
Fixed overhead	50,000	52,000
Variable overhead	<u>30,000</u>	<u>37,000</u>
Total overhead	<u>80,000</u>	<u>89,000</u>
Machine hours	20,000	25,000
Machine hour rate £4		

The first would be used if the difference was felt to be due to below ‘normal’ levels of achievement that could and should have been avoided – i.e. if it represents an ‘abnormal’ loss or an ‘abnormal’ gain. For example, if the number of hours worked had dropped due to bad management planning. (This is what you learnt in Sections 37.6 and 37.7, when normal and abnormal losses were discussed.)

The second would be used if the differences were felt to be due to poor estimates of the original budgets. That is, if the activity levels achieved were ‘normal’ but the budget was based on something either above or below ‘normal’ activity. As a result, the overheads overabsorbed or underabsorbed represent costs that should be removed/added to the production cost for the period.

**The third would apply only to interim financial statements, not those prepared at a period end.**

**Activity 43.1**

Why?

**Analysing the variances**

The £11,000 variance found in Exhibit 43.2 between the amount recovered of £100,000 and the actual overhead cost of £89,000 can be analysed into a group of constituent variances in the normal manner of standard costing. In the example we have used, the variance can be due to either:

- the prices paid for goods and services were different from original estimates or standards – an ‘expenditure’ variance (sometimes called a ‘budget’ variance – both terms mean the same thing); or
- the volume of activity during the period was different from the original estimate – a ‘volume’ variance (for fixed overheads) or an ‘efficiency’ variance (for variable overheads).

Let’s look at both these types of variances.

**(a) Expenditure variance**

An expenditure variance represents the difference between the actual cost of an overhead and its budgeted overhead cost after the level of activity used to calculate the total budgeted overhead cost is adjusted to the actual level of operational activity and the budgeted overhead cost recalculated.

From Exhibit 43.2 the budget figures need to be increased to take account of the fact that activity measured in machine hours has increased from 20,000 to 25,000 hours. **This will not, of**

**course, increase the fixed overhead** – only the variable overheads, which we will assume increase by 25 per cent in line with the increase in the machine hours. (You can see from Exhibit 43.1 that the £4 overhead recovery rate comprised 5/8 (£2.50) for the fixed element and 3/8 (£1.50) for the variable element.) The adjusted budget figures are shown in Exhibit 43.3.

### Exhibit 43.3

	Department A			
	a Original budget	b Adjusted budget	c Actual	b – c Variance
Fixed overhead	50,000	50,000	52,000	(2,000)
Variable overhead	<u>30,000</u>	<u>37,500</u>	<u>37,000</u>	<u>500</u>
	<u>80,000</u>	<u>87,500</u>	<u>89,000</u>	<u>(1,500)</u>

The actual expenditure of £89,000 exceeds the adjusted budget by £1,500. You can see from Exhibit 43.3 that this represents an adverse fixed overhead expenditure variance of £2,000 and a favourable variable expenditure variance of £500.

### (b) Volume variance

Apart from the cost of the overheads, another factor was included in the calculations when the budgets were originally calculated – the estimated number of machine hours that would be worked. In the above example, we estimated that 20,000 machine hours would be worked. In fact, 25,000 machine hours were worked. This additional 5,000 hours would not matter if *all* the overheads were variable, since the rate per hour would be constant at different activities. However, where fixed costs are concerned, increasing the activity will increase the amount recovered above the level required and, if activity is below budget, insufficient fixed overhead will be recovered.

As you know, in this example the overhead rate of £4 per machine hour was split:

$$\text{Fixed} \quad \frac{50,000}{80,000} \times £4 = £2.50$$

$$\text{Variable} \quad \frac{30,000}{80,000} \times £4 = £1.50$$

As a result, when the actual machine hours increased from 20,000 to 25,000 we recovered  $5,000 \times £2.50 = £12,500$  more than was actually incurred on the fixed overheads, i.e. there is a favourable variance (a volume variance) of £12,500.

An alternative way of viewing this is to compare the amount of overheads recovered at 25,000 hours with the flexible budget for this level of activity:

	Total	Fixed	Variable
Recovered $25,000 \times £4 =$	100,000	62,500	37,500
Budget variable cost $25,000 \times £1.50$	37,500		(37,500)
Fixed cost	<u>50,000</u>	(50,000)	
	(87,500)		
Volume variance	<u>12,500</u>	<u>12,500</u>	<u>–</u>



This volume variance shows that by increasing the utilisation of the fixed resources, considerable savings were made. (This is often the case.) The £12,500 is, therefore, a favourable variance in terms of the original machine-hours-rate-based budget.

### Summary of variances

The analysis so far shows:

	£	£
Overhead recovered at actual level of activity ( $25,000 \times £4$ )		100,000
Fixed overhead variance at this level of activity – adverse	2,000	
Variable overhead variance at this level of activity – favourable	( 500)	
		<u>1,500</u>
		101,500
Volume variance – favourable		( 12,500)
Actual level of expenditure overhead		<u><u>89,000</u></u>

This analysis has revealed that the variances to be investigated are the adverse fixed expenditure variance of £2,000 and the favourable variable expenditure variance of £500. The remaining £12,500 volume variance was due to the increase in activity and has been eliminated from further investigation after the budget was adjusted (i.e. flexed) for the change in activity.

However, while it does not apparently require further investigation, the volume variance does require to be dealt with. As it stands, £12,500 too much has been recovered. That is, production has been charged with £12,500 too much. If you are not operating a standard costing system and if it was due to an error in the estimation of ‘normal’ activity, you would need to deal with it using the second of the three approaches described earlier in this section – allocate it between closing inventories and the cost of goods sold. (We will return to this variance at the end of the next section.)

This is not the end of the analysis required of the variable variances. You need to do more than simply find the difference between what it should have cost at the actual level of activity (i.e. the flexed budget) and what it actually cost. You need to look at what was actually produced and use that information to identify precisely which variances are to be investigated.

## 43.4 Assessing variances

In an organisation manufacturing products that has adopted a standard costing system, the cost of the overheads are normally directly related to the products produced. For example, if a Superwidget is manufactured in Department A and it is estimated that it requires 2 machine hours to produce each Superwidget, the standard overhead cost per Superwidget will be  $2 \times £4 = £8$ .

If in the actual period, a Superwidget takes less than two hours to make there will be a favourable variance which will be costed at £4 per hour. Similarly, if more than two hours are taken, there will be an adverse (i.e. unfavourable) variance costed on the same basis.

Let's again use the example from Exhibit 43.1 and assume Department A manufactures only Superwidgets, that the original budget is to make 10,000 Superwidgets, and that the actual production of Superwidgets is 12,000. We can now flex the budget using the number of Superwidgets produced. This is shown in Exhibit 43.4.

Now that we are no longer using the machine hours to flex the budget, we can see another variance: 12,000 widgets should take 24,000 hours at the standard rate of 2 machine hours per Superwidget. Since the actual hours are 25,000, 1,000 times £4, i.e. £4,000 too much has been charged to production. In effect, this represents a favourable variance from the machine-hour-based flexed budget as actual costs do not include this £4,000. (This is quite complex as the number of machine hours worked is 1,000 higher than expected, so ought to be

**Exhibit 43.4**

	Department A		
	Original budget	Flexed budget	Actual
	£	£	£
Total overhead expenditure	80,000	96,000	89,000
Machine hours	20,000	24,000	25,000
Machine hours per Superwidget	2	2	
Number of units produced	10,000	12,000	12,000

an adverse variance. It would have been had the machine-hour-based overhead rate been used to flex the budget. It was not.) (Note: this is made up of both fixed *and* variable overhead.)

Using the flexed budget, we get a standard overhead recovery at the actual level of output (now based on units produced) of £96,000 (i.e. 12,000 Superwidgets at 2 machine hours each equals 24,000 machine hours at £4 per hour). Actual costs were £89,000. The total variance between the flexed budget figure of £96,000 and the actual expenditure of £89,000 is therefore £7,000. This can be broken down as shown below. (Note, the first two lines would not normally be included as the basis for the budgeted activity has been changed from machine hours to quantity produced. It is included here to illustrate the link between the effect of using the different overhead rate.)

	£
Overhead recovered at actual level of activity (25,000 × £4)	100,000
Variable overhead efficiency variance favourable	( 4,000)
Standard cost of overheads for 12,000 actual Superwidgets produced × £8 =	96,000
Variable overhead expenditure variance – favourable (see below)	(500)
Variable overhead efficiency variance – adverse (see below)	1,500
Fixed overhead expenditure variance – adverse (see below)	2,000
Fixed overhead volume variance – favourable (see below)	(10,000)
Actual overhead expenditure	<u>89,000</u>

The £4,000 favourable variance represents the amount the overhead over-recovery would have increased had the original machine-hour-based overhead rate been used throughout rather than the output-based rate.

Compare this analysis with the one shown at the end of the *summary of variances* part of Section 43.3. The comparison should tell you three things. Firstly, the choice of the basis on which to flex a budget can significantly affect the information provided concerning the existence of variances and their cause. Secondly, if budgets are not flexed in a timely manner, variances can arise that need to be dealt with in the financial statements and in the valuation of stock that may be significantly greater than they should have been.

Finally, you can now see that the original £12,500 favourable volume variance comprised of favourable variances of £4,000 for the machine hours and a fixed volume variance of £10,000 and an adverse efficiency variance of £1,500. You will see an alternative interpretation of the £12,500 variance in the next section.

## 43.5 Formulae for variances

In this section, we will use the Superwidget example data. The formula for each overhead variance is as follows:

$$\begin{aligned}
 \text{Variable overhead expenditure variance} &= \text{Actual cost} - (\text{Actual hours worked} \times \text{Standard rate}) \\
 &= \text{AC} - (\text{AH} \times \text{SR}) \\
 &= £37,000 - (25,000 \times £1.50) = £500 \text{ Favourable} \\
 \\
 \text{Variable overhead efficiency variance} &= (\text{Actual hours worked} - \text{Actual production in standard hours}) \times \text{Standard rate} \\
 &= (\text{AH} - \text{APSH}) \times \text{SR} \\
 &= (25,000 - 24,000) \times £1.50 = £1,500 \text{ Adverse (Note 2)} \\
 \\
 \text{Fixed overhead expenditure variance} &= \text{Budgeted fixed production overheads} - \text{Actual fixed production overheads} \\
 &= \text{BFPO} - \text{AFPO} \\
 &= £50,000 - £52,000 = £2,000 \text{ Adverse} \\
 \\
 \text{Fixed overhead volume variance (Note 1)} &= (\text{Actual production in standard hours} \times \text{Standard rate}) - \text{Budgeted fixed production overheads} \\
 &= (\text{APSH} \times \text{SR}) - \text{BFPO} \\
 &= (24,000 \times £2.50) - £50,000 = £10,000 \text{ Favourable}
 \end{aligned}$$

The fixed overhead volume variance can be further divided into:

$$\begin{aligned}
 \text{Fixed overhead efficiency variance (Note 1)} &= (\text{Actual hours worked} - \text{Actual production in standard hours}) \times \text{Standard rate} \\
 &= (\text{AH} - \text{APSH}) \times \text{SR} \\
 &= (25,000 - 24,000) \times £2.50 = £2,500 \text{ Adverse} \\
 \\
 \text{Fixed overhead capacity variance (Note 1)} &= (\text{Actual hours worked} - \text{Budgeted hours to be worked}) \times \text{Standard rate} \\
 &= (\text{AH} - \text{BH}) \times \text{SR} \\
 &= (25,000 - 20,000) \times £2.50 = £12,500 \text{ Favourable}
 \end{aligned}$$

**Note 1:** The last three variances – the fixed overhead volume variance and its component variances, the fixed overhead efficiency and capacity variances – are only calculated when absorption costing is being used. When the basis of the costing system is marginal costing, only the first three are used (because you do not link fixed costs to the level of output). In a marginal-costing-based environment, the total standard overhead cost for the 12,000 Superwidgets would be 12,000 at £3.00 variable overhead cost per Superwidget (= £36,000) plus the budgeted fixed cost of £50,000.

Rather than simply calculating the fixed overhead volume variance, you should normally calculate the efficiency and capacity variances. However, you need to be aware that together they represent the fixed overhead volume variance and so you should be able to calculate it if required. Replacing the favourable fixed overhead volume variance of £10,000 in the Superwidgets example produces the following breakdown of costs and variances:

	£
Standard cost of overheads for 12,000 actual Superwidgets produced $\times$ £8 =	96,000
Variable overhead expenditure variance – favourable	( 500)
Variable overhead efficiency variance – adverse	1,500
Fixed overhead expenditure variance – adverse	2,000
Fixed overhead efficiency variance – adverse	2,500
Fixed overhead capacity variance – favourable	(12,500)
Actual overhead expenditure	<u>89,000</u>

The formula for the variable overhead efficiency variance is the same formula as is used for the fixed overhead efficiency variance. As you will soon learn, it is also the same as the formula for the labour efficiency variance and the material usage variance.

**Note 2:** Efficiency variances are adverse when less is recovered than should have been.

## 43.6 A comprehensive example

The organisation in this example operates standard costing based on absorption costing. The data set out below refers to a cost centre for a particular period:

### Budget

Variable overheads (extract) flexible budget

<i>Output</i>	<i>Cost</i>
<i>In units</i>	<i>£</i>
<i>In standard hours</i>	
9,800	98,000
9,900	99,000
10,000	100,000
10,100	101,000
10,200	102,000

Fixed overheads 150,000

Budgeted volume of production 10,000 units

Standard labour hours per unit = 5

### Actual

Variable overhead	£104,000
Fixed overhead	£160,000
Direct labour hours worked	49,000 hours
Units of production	9,900 units

The 9,900 units of production is the equivalent of  $9,900 \times 5 = 49,500$  standard direct labour hours.

Before calculating the variances, let's consider the data we've been given. The flexible budget shows that each unit of production has a standard variable overhead cost of £10. Alternatively, this can be expressed as  $£10 \div 5 = £2$  per standard hour of labour. **It should not be assumed that this rate of £2 also applies to levels of production outside the range shown** – there may well be step costs, such as additional supervision, which **would alter** the standard variable overhead rate at levels of output outside the range shown.

The fixed costs are thought likely to remain fixed provided the range of output does not extend too far above or below the budgeted volume of production. The fixed standard rate is based on the budgeted volume of production and is therefore  $£150,000 \div 50,000 = £3$  per standard hour of labour, or  $£150,000 \div 10,000 = £15$  per unit.

The standard unit overhead cost is:  $£10 + £15 = £25$  per unit or  $£2 + £3 = £5$  per labour hour.

**This budgeted volume of production is likely to be the level of output thought of as being 'normal' and acceptable in the long run. It is referred to as the normal volume of production or, more commonly, as the 'normal level of activity'.**

### Calculation of variances

Firstly, it is helpful to calculate the overall net variance which is to be analysed. This is found using the standard cost of the actual units produced:

	£
Actual total overhead costs	264,000
Standard cost of actual production $9,900 \times £25 =$	<u>247,500</u>
Total variance	<i>Adverse</i> ( <u>16,500</u> )

This is broken down into the five component variances as follows.

### Variable overhead expenditure variance

	£
Actual cost	104,000
Actual hours worked at standard rate $= 49,000 \times £2$	<u>98,000</u>
Variable expenditure variance	<i>Adverse</i> ( <u>6,000</u> )

### Variable overhead efficiency variance

Actual hours worked	49,000		
Actual production in standard hours	<u>49,500</u>		
Variable efficiency variance	500	$\times £2$	<i>Favourable</i> <u>1,000</u>

### Fixed overhead expenditure variance

Budgeted fixed production overheads	150,000
Actual fixed production overheads	<u>160,000</u>
Fixed expenditure variance	<i>Adverse</i> ( <u>10,000</u> )

### Fixed overhead efficiency variance

Actual hours worked	49,000		
Actual production in standard hours	<u>49,500</u>		
Variable efficiency variance	500	$\times £3$	<i>Favourable</i> <u>1,500</u>

### Fixed overhead capacity variance

Actual hours worked	49,000		
Budgeted hours to be worked	<u>50,000</u>		
Fixed volume variance	1,000	$\times £3$	<i>Adverse</i> ( <u>3,000</u> )

### Summary of variances

Variable expenditure	<i>Adverse</i>	( 6,000 )
Variable efficiency	<i>Favourable</i>	1,000
Fixed expenditure	<i>Adverse</i>	(10,000)
Fixed efficiency	<i>Favourable</i>	1,500
Fixed capacity	<i>Adverse</i>	( 3,000 )
	<i>Net Adverse</i>	( <u>16,500</u> )

### Reconciliation of standard and actual cost

Standard cost of actual production $9,900 \text{ units} \times £25$	(247,500)
Variable expenditure – <i>adverse</i>	( 6,000 )
Efficiency variance – <i>favourable</i>	1,000
Fixed expenditure – <i>adverse</i>	( 10,000 )
Fixed efficiency variance – <i>favourable</i>	1,500
Fixed capacity variance – <i>adverse</i>	( 3,000 )
Actual cost of overheads	( <u>264,000</u> )

## 43.7 Variances and management action

The calculation of variances and their explanation to managers is of no value unless the information so revealed is used when making decisions which change subsequent activities. The question then arises as to whether every variance needs some form of action. It is not possible to be dogmatic here. It really does depend on the circumstances. In some cases, a fairly large variance may be insignificant whereas, in others, even a small amount may call for urgent action.

There is no doubt that variance calculations of the *right* type, given to the *right* people at the *right* time, which have an effect upon subsequent operations, can make a significant positive impact.

On the other hand, much of the effort put into variance calculation in many organisations just goes to waste, as managers do not act appropriately on the information they have received. There are many reasons why this may occur, some obvious, some less so. However, it is often because a poor 'selling' job has been done by the management accountant on the managers concerned, in that either the information provided is not really what the managers require to enable them to tackle their jobs properly or, as often, because they have not been able to convince the managers that variance analysis is worthwhile. This is the major problem of variance analysis. Many managers and other decision makers view it as an accounting tool which is far too difficult to understand; so they ignore it.

## 43.8 Sales variances

The analysis of the difference between budgeted sales levels and actual sales levels can obviously have an important bearing on the depth of understanding of results. The main issues which are important in analysing sales are the sales price, volume, and mix. These are analysed using three variances, the:

- (a) selling price variances
- (b) volume variances
- (c) mix variances.

**The selling price variance measures the overall profit difference caused by budgeted unit selling price and actual unit selling price being different.** If the budget was to sell 100 widgets at £5 each and the actual sales were 100 widgets of £4.50 each, there would be a profit reduction of £50 due to the adverse selling price variance of 50p per unit on the 100 units sold.

The volume variances in sales is measured in terms of the difference between the budgeted and the actual quantity sold. The impact of changes in volume of sales on profit can only be measured if we know the profitability of the units sold. This is considered at gross profit level. Thus, if the budget is to sell 100 widgets with a unit gross margin of £2 but only 90 are sold, this represents an adverse variance of 10 units at the margin of £2, i.e. a loss of profit of £20. If several products are being sold, the variance is calculated on the basis of the total units actually sold in the proportions originally budgeted.

Let's look at an example.

### Exhibit 43.5

Product	Budget sales units	Budget %	Budget unit gross profit margin £	Total budget gross profit margin £	Actual sales units	Actual sales in budget %
X	200	33.3	1.00	200	250	240
Y	200	33.3	1.50	300	190	240
Z	200	33.3	3.50	700	280	240
	<u>600</u>	<u>100.0</u>		<u>1,200</u>	<u>720</u>	<u>720</u>

The **volume variance** is calculated by comparing actual sales in (the same proportion of total sales as was used in the) budget percentage mix with the original budget using the budgeted gross profit margins:

Product	Actual sales in same proportions as budget sales units*	Budget sales units	Difference in units	Budget unit gross profit margin £	Volume variances £
X	240	200	40	1.00	40.00
Y	240	200	40	1.50	60.00
Z	240	200	40	3.50	140.00
	<u>720</u>	<u>600</u>	<u>120</u>		<u>240.00</u>

**\*Note:** Actual sales = 720 therefore, in budget proportions, 720 units would have been sold,  $\frac{1}{3}X + \frac{1}{3}Y + \frac{1}{3}Z = 240 + 240 + 240$ .

The **mix variance** arises where more than one product is being sold and the different products have different profit margins. If the proportions of the actual sales of the products vary from budget, the overall profit will vary as a consequence, even if the total sales revenue is the same as in the budget.

In the volume variance calculation, the original budget was compared with actual total overall sales volume split between the products in the budget mix. For the mix variance, the actual sales in the budget mix are compared with the actual sales and the differences evaluated at the budgeted gross profit margin.

### Exhibit 43.6

Product	Actual units sold	Actual sales in same proportions as budget sales units	Difference in units	Budget unit gross profit margin £	Mix variance £
X	250	240	10	1.00	10
Y	190	240	(50)	1.50	( 75)
Z	280	240	40	3.50	140
	<u>720</u>	<u>720</u>	<u>=</u>		<u>75</u>

The difference in mix between budget and actual has increased profit by £75 due to the influence of a higher proportion of sales of product Z which has a higher gross margin than the other products. That is, there is a favourable sales mix variance of £75.

In this example, we assumed the budget and actual selling prices per unit were identical. This is often not the case. Let's look at another example. This time, we will calculate the price variance, then the volume variance and, finally, the mix variance.

### Exhibit 43.7

Product	Budget %	Budget				Actual			
		Units	Unit selling price £	Unit gross profit margin £	Total profit £	Units	Unit selling price £	Unit gross profit margin £	Total profit £
A	16.7	100	20	5	500	90	21	6	540
B	33.3	200	25	10	2,000	220	24	9	1,980
C	50	300	10	2	600	350	10	2	700
	<u>100</u>	<u>600</u>			<u>3,100</u>	<u>660</u>			<u>3,220</u>

Total variance =	Actual profit	3,220
	Budget profit	(3,100)
	Favourable variance	<u>120</u>

(i) Eliminate the price variance using the actual units sold as the basis.

	<i>Actual units sold</i> 1	<i>Budget price</i> 2 £	<i>Actual price</i> 3 £	<i>Unit variance</i> 3 – 2 = 4 £	<i>Price variance</i> 1 × 4 = 5 £
A	90	20	21	1	90
B	220	25	24	(1)	(220)
C	350	10	10	–	–
				<i>Adverse price variance</i>	<u>(130)</u>

(ii) Eliminate the volume variance using the unit budgeted gross profit to evaluate the variance.

	<i>Actual units sold</i> 1	<i>Budget %</i> 2	<i>Actual sales in same proportions as budget sales units</i> 3 £	<i>Budget sales units</i> 4 £	<i>Difference in units</i> 3 – 4 = 5 £	<i>Budget unit gross margin</i> 6 £	<i>Volume variance</i> 5 × 6 = 7 £
A	90	16.7	110	100	10	5	50
B	220	33.3	220	200	20	10	200
C	<u>350</u>	<u>50</u>	<u>330</u>	<u>300</u>	<u>30</u>	2	<u>60</u>
	<u>660</u>	<u>100</u>	<u>660</u>	<u>600</u>	<u>60</u>		<i>Favourable volume variance</i> <u>310</u>

(iii) Calculate the mix variance.

	<i>Actual units sold</i> 1	<i>Budget %</i> 2	<i>Actual sales in same proportions as budget sales units</i> 3 £	<i>Difference in units</i> 1 – 3 = 4 £	<i>Budget unit gross margin</i> 5 £	<i>Mix variance</i> 4 × 5 = 6 £
A	90	16.7	110	(20)	5	(100)
B	220	33.3	220	–	10	–
C	<u>350</u>	<u>50.0</u>	<u>330</u>	<u>20</u>	<u>2</u>	<u>40</u>
	<u>660</u>		<u>660</u>			<i>Adverse mix variance</i> <u>(60)</u>

Summary of variance:

	£
Adverse price variance	(130)
Favourable volume variance	310
Adverse mix variance	( 60)
Favourable total sales variance	<u>120</u>



The gross profit margin may change for many reasons other than changes in sales volume. For example, if the cost of materials varies from budgets or wage rates change, the sales price may be raised in order to preserve the gross profit margin. This type of variance has, however, already been dealt with under materials and labour variances.

## Learning outcomes

You should now have learnt:

- 1 How to calculate overhead and sales variances.
- 2 The similarities between the variable production overhead efficiency variance and both the labour efficiency variance and the materials usage variance.
- 3 How to identify appropriate reasons why variances found have occurred.
- 4 That the calculation of variances and their explanation to managers is of no value unless the information so revealed is put to use in making decisions which change subsequent activities.

## Answer to activity

- 43.1** Because they are period costs that must be charged to profit and loss during the accounting period.

## Review questions

**Advice:** Remember that the overhead variances consist of the difference between the standard costs at the actual level of activity and the actual costs. Remember also that the total sales variance comprises of three variances – price, volume and mix.

It is important that you answer the parts of the questions that ask you to comment on exactly what might be behind the variances and what action is needed.

**43.1** Calculate the appropriate overhead variances from the following data.

- (a) Budgeted for £9,000 variable overhead expenditure and 1,500 labour hours of production activity.

Actual variable overhead expenditure	£8,400
Actual labour hours	1,500

- (b) Budgeted for £60,000 variable overhead expenditure and 12,000 machine hours of production activity.

Actual variable overhead expenditure	£61,000
Actual machine hours	14,000

- (c) Budgeted for £9,750 fixed overhead and the actual fixed overhead is found to be £9,400.  
 (d) Budgeted for £16,320 fixed overhead and the actual fixed overhead is found to be £16,400.  
 (e) Budgeted production of 17,000 units in 19,000 hours. Standard variable overhead rate is £4 per hour. In fact, 17,000 units are produced in 18,100 hours.  
 (f) Budgeted production of 11,500 units in 23,000 hours. Standard variable overhead rate is £6 per hour. In fact, 11,320 units are produced in 26,000 hours.

**43.2A** Calculate the overhead variances in the following cases:

- (a) Budgeted for £19,000 fixed overhead. The actual fixed overhead turns out to be £18,109.
- (b) Budgeted for production of 6,000 units in 300 machine hours. The variable overhead rate is £12 per machine hour. In fact, 6,000 units are produced in 280 machine hours.
- (c) Budgeted for £28,000 variable overhead and 14,000 labour hours. Actual variable overhead is £28,000 and actual labour hours 13,800.
- (d) Budgeted for £12,000 variable overhead and 6,000 machine hours. Actual variable overhead is £11,400 and actual machine hours 6,000.
- (e) Budgeted for £84,100 fixed overhead. The actual fixed overhead turns out to be £88,700.
- (f) Budgeted for production of 15,000 units in 20,000 machine hours. Standard variable overhead rate is £10 an hour. In fact, 14,600 units are produced in 20,000 machine hours.

**43.3** Calculate the overhead variances of Mark & Son Ltd. The budget is prepared as:

- (a) Total budgeted variable overhead: £120,000.
- (b) Total budgeted fixed overhead: £48,000.
- (c) Budgeted level of production activity: 60,000 direct labour hours to produce 50,000 units.

The actual results turn out to be:

- (d) Actual variable overhead: £128,000.
- (e) Actual fixed overhead: £46,000.
- (f) Actual level of production activity was 59,000 direct labour hours which resulted in 52,000 units of production.

**43.4A** Calculate the overhead variances of Changes Ltd. The budget is prepared as:

- (a) Total budgeted variable overhead; £80,000.
- (b) Total budgeted fixed overhead; £120,000.
- (c) Budgeted level of production activity: 60,000 direct labour hours to produce 240,000 units.

The actual results turn out to be:

- (d) Actual variable overhead: £78,000.
- (e) Actual fixed overhead: £104,000.
- (f) Actual level of production activity was 64,000 direct labour hours which resulted in 236,000 units being produced.

**43.5** The Morningside Company Ltd had the following results for the year to 31 December 20X7. A single product – a woggley – was made by the company.

	<i>Budget</i>	<i>Actual</i>
Sales in units	140,000	168,000
Sales in £	350,000	403,200

The standard cost of manufacturing each unit was £2.20.

What are the price and volume variances on sales in 20X7?

**43.6A** Felicidade PLC manufactures a detergent in one of its factories. The information for the year to 30 June 20X5 was as follows:

	<i>Budget</i>	<i>Actual</i>
Sales in litres	80,000	75,000
Sales in £	480,000	480,000

The standard cost of manufacturing a litre was £3.10.

Calculate the price and volume variances for the year.




**43.7** The following data was collected for Metal Chain Ltd for the year ended 31 October 20X8.

Product	Budget selling price £	Budget sales units	%	Budget gross profit per unit £	Budget gross profit total £	Actual selling price £	Actual sales unit	%	Actual gross profit per unit £	Actual gross profit total £
A	6	1,000	25	2.00	2,000	8.20	1,224	34	1.90	2,325.60
B	9	2,000	50	2.50	3,000	11.60	2,160	60	2.30	4,830.00
C	8	1,000	25	2.20	2,200	10.90	216	6	2.20	475.20
		<u>4,000</u>	<u>100</u>		<u>7,200</u>		<u>3,600</u>	<u>100</u>		<u>7,630.80</u>

Calculate the price, volume and mix variances for the year.

**43.8A** The following information relates to The Melted Cheese Company Ltd for the year to 31 December 20X1:

Product	Budget units	Sales %	Budget selling price per unit £	Budget gross profit per unit £	Actual units	Sales %	Actual unit selling price £	Actual unit gross profit £
X	800	14.3	60	10	1,000	20.8	58	8
Y	1,200	21.4	50	8	800	16.7	54	10
Z	<u>3,600</u>	<u>64.3</u>	80	20	<u>3,000</u>	<u>62.5</u>	78	18
	<u>5,600</u>	<u>100.0</u>			<u>4,800</u>	<u>100.0</u>		

Calculate the price, volume and mix variances for 20X1.

**43.9** Singleton has been operating for some years as a manufacturer of a single product, and after several years' growth has decided to form a company Singleton Ltd.

His accountant advised him that in an increasingly competitive world he really should achieve greater financial control of his business, and to assist Singleton in this objective the accountant prepared a simple manufacturing budget for the financial year ending 31 August 20X9.

The following schedule provides the detail of the budget and the actual results for the year ended 31 August 20X9. The actual results have been extracted from the ledger as at that date without any adjustments made.

	Budget £	Actual £
Raw materials consumed	80,000	90,000
Factory rent	10,000	12,500
Factory maintenance expenses	6,700	6,100
Heating and lighting	2,900	3,000
Direct labour wages	120,000	110,500
Direct expenses	5,800	6,000
Depreciation of plant and machinery	8,900	10,500
Wages, maintenance labour	18,000	24,000
Other factory overheads	12,700	9,600

*Additional information:*

1 At 31 August 20X9 the following amounts were still owing:

	£
Direct labour wages	5,100
Heating and lighting	900
Other factory overhead	400

- 2 The factory rent paid covered the period from 1 September 20X8 to 30 November 20X9.  
 3 During the year the firm sold 90,000 units of its product at £4.50 a unit.  
 4 There was no work-in-progress. The stocks of finished goods were:

	£
1 September 20X8	28,900
31 August 20X9	35,000

**Required:**

- (a) What is variance analysis and how can it contribute to the operating efficiency of Singleton's business?  
 (b) For the year ended 31 August 20X9 prepare:  
     (i) A manufacturing account and a schedule of the relevant variances;  
     (ii) A trading account.  
 (c) Write a report to advise Singleton whether the principles of budgeting can be applied to:  
     (i) Non-manufacturing costs;  
     (ii) The control of cash resources.

Your report should indicate in each case the potential benefits that the firm could achieve through extending its use of budgeting.

(AQA (Associated Examining Board): GCE A-level)

**43.10A** Flint Palatignium Ltd calculates the prices of its output by adding a mark-up of 15 per cent to standard costs. These standard costs are arrived at by reference to budgeted outputs and estimated direct costs as follows:

	£ each	Standard price/rate
Materials	5.00	£1 per unit
Direct labour	2.50	£1.25 per hour
Overheads	<u>7.50</u>	£3.75 per direct labour hour
	15.00	
Mark-up	<u>2.25</u>	
Selling price	<u>17.25</u>	

Management accounts for April, 20X8 provide an analysis of operations as follows:

	£
Sales – at standard price	534,750
Standard margin on sales	<u>69,750</u>
Favourable sales price variance	<u>8,691</u>
	78,441
Other favourable variances	
Material price	4,662
Labour rate	600
Overhead expenditure	<u>147</u>
	83,850
Adverse variances	
Material usage	( 1,743)
Labour efficiency	( 292)
Overhead capacity	(    9)
Actual operating profit	<u>81,806</u>

Materials in stock are valued at standard cost. At 1 April, 1,000 units of material were held, whereas at 30 April the stock of this material increased to 1,750 units.

**Required:**

- (i) A trading account for the month of April 20X8 comparing the budgeted income and expenditure appropriate to actual output, to actual income and expenditure.





- (ii) An explanation of the value of standard costing and variance analysis to a service business whose custom is to negotiate fixed price contracts.

(Welsh Joint Education Committee: GCE A-level)

**(Note: The following question covers material from both Chapters 42 and 43.)**

**43.11A** HGW Limited produces a product called a Lexton. The standard selling price and the manufacturing costs of this product are as follows:

Standard selling price per unit		£ <u>86</u>
Standard production costs:		
Direct material	1.5 kilos at £12 per kilo	18
Direct labour	4.4 hours at £7.50 per hour	33
Variable overheads	4.4 hours at £5 per hour	<u>22</u>
		<u>73</u>

The projected production and sales for March 20X4 were 520 units.

On 1 April 20X4 the following actual figures were determined.

Sales	550 units at £85 each
Production	550 units
Direct material	785 kilos at £12.40 per kilo
Direct labour	2,400 hours at £7.80 per hour
Overheads	£12,500 (overall variance £400 adverse)

There was no opening stock of the product Lexton.

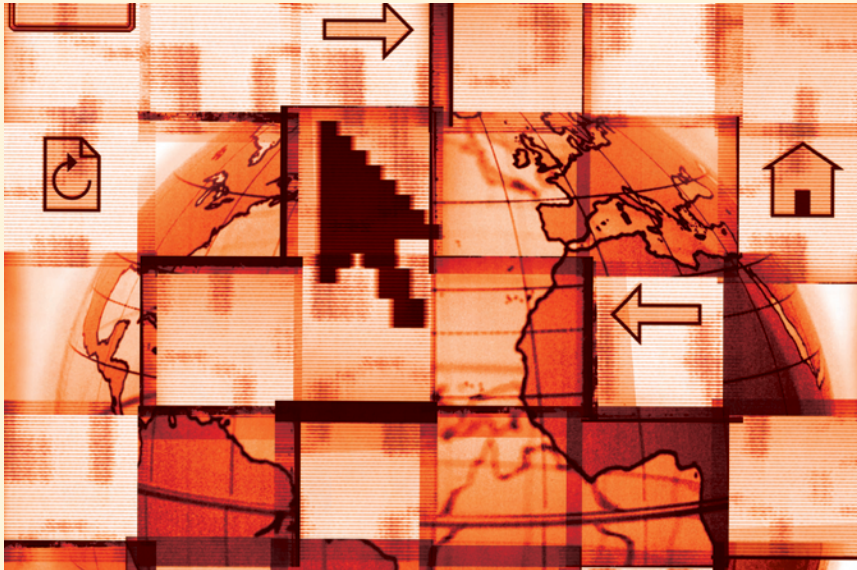
**Required:**

- Prepare an actual profit and loss statement for HGW Ltd for March 20X4
- Calculate the following variances and their respective sub-variances:
  - sales – price and volume
  - direct materials – price and usage
  - direct labour – rate and efficiency
- Prepare a statement reconciling the actual profit calculated in part (a) with the budgeted profit on actual sales. (Use the variances calculated in part (b) and the given overhead variance.)
- Write a report to the management outlining the factors that need to be considered when standards are being established.

(AQA (Associated Examining Board): GCE A-level)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# PLANNING, CONTROL AND DECISION MAKING



## Introduction

This part looks at how accounting information may be used to guide decision making within an entity, at how the cost of investment is calculated, and at how organisations are beginning to use the information available to them to provide a richer view of the performance of the organisation than is possible from straightforward ratio analysis.

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# Break-even analysis

## Learning objectives

After you have studied this chapter, you should be able to:

- explain what is meant by 'break-even'
- prepare break-even graphs and contribution graphs
- explain the importance of contribution and fixed costs in identifying the break-even level of sales
- use graphs to identify break-even point, the margin of safety, and the contribution for any level of activity
- use break-even graphs to show the impact of changes in costs, volume and selling price upon profitability
- describe some of the limitations of break-even charts
- use a formula in order to calculate the break-even point
- explain the relevance of contribution to decision making

## Introduction

In this chapter, you'll learn about break-even analysis and, at the same time, about the relationship between costs, volume, selling price and profit.

### 44.1 Introduction

The level of activity achieved by a business is of great importance in determining both whether or not it makes a profit or loss, and the size of such profits or losses. Let's take an example to which the answer is obvious. If a business has fixed costs of £100,000 and its total revenue is £80,000 then, no matter how much the variable costs are, the business is bound to make a loss. A business has to cover both its fixed costs and its variable costs before it can make a profit. With revenue below the level of fixed costs, as in this case, a loss is bound to arise.

There is, therefore, a great deal of interest in exactly how much revenue (i.e. sales) has to be earned before a profit can be made. If revenue is below fixed costs, a loss will be incurred; if revenue is below total costs (i.e. fixed costs + variable costs) a loss will still be incurred. However, when revenue is greater than the combined total of the fixed and variable costs, a profit will have been made. The question is, at what level of sales does the business stop incurring a loss and, with the next unit of revenue, make a profit? That is, at what point does it break even and make neither a profit nor a loss?



**Fixed costs stay unchanged over stated ranges in the volume of production, but variable costs change in total when the volume of production changes within a stated range.** As revenue increases so do variable costs, so that the only item that remains unchanged is that of fixed costs. Let's look at an example showing the changing costs and revenues over differing volumes of production.

Apollo Ltd has fixed costs of £5,000. The variable costs are £2 per unit. The revenue (selling price) is £3 per unit. Looking at production in stages of 1,000 units we can see:

#### Exhibit 44.1

No. of units	Fixed cost	Variable cost	Total cost: Variable + Fixed	Revenue (Sales)	Profit	Loss
	£	£	£	£	£	£
0	5,000	nil	5,000	nil		5,000
1,000	5,000	2,000	7,000	3,000		4,000
2,000	5,000	4,000	9,000	6,000		3,000
3,000	5,000	6,000	11,000	9,000		2,000
4,000	5,000	8,000	13,000	12,000		1,000
5,000	5,000	10,000	15,000	15,000	nil	nil
6,000	5,000	12,000	17,000	18,000	1,000	
7,000	5,000	14,000	19,000	21,000	2,000	
8,000	5,000	16,000	21,000	24,000	3,000	
9,000	5,000	18,000	23,000	27,000	4,000	

With an activity level of 5,000 units, the business will break even. It will make neither a profit nor a loss. Above that it moves into profit; below that, it never makes a profit.

We could have calculated the break-even point without drawing up a schedule of costs, etc. as in Exhibit 44.1. Instead we could have said that for one unit the revenue is £3 and the variable cost is £2, so that the remaining £1 is the amount out of which the fixed costs have to be paid, and that anything left over is profit.

The £1 is the 'contribution' towards fixed costs and profit. If the contribution was only just enough to cover fixed costs, there would be no profit, but neither would there be any loss. There are £5,000 fixed costs, so that with a contribution of £1 per unit there would have to be 5,000 units to provide a contribution of £5,000 to cover fixed costs. It could be stated as:

$$\text{Break-even point} = \frac{\text{Fixed costs}}{\text{Selling price per unit} - \text{Variable costs per unit}}$$

i.e. in the case of Apollo Ltd

$$\frac{£5,000}{£3 - £2} = \frac{5,000}{1} = 5,000 \text{ units}$$

#### Activity 44.1

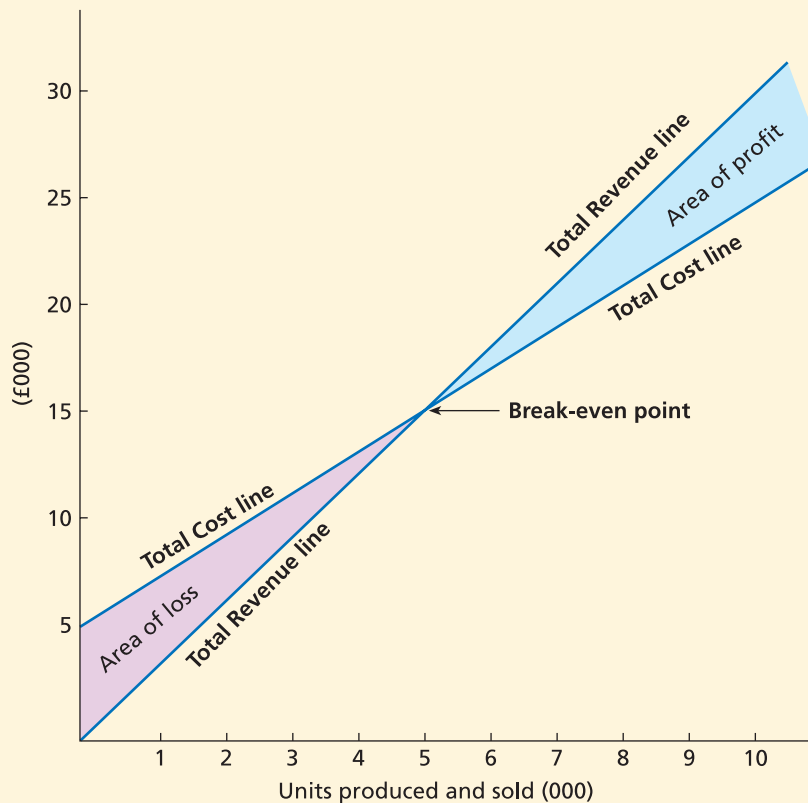
If fixed costs were £7,000 and the contribution per unit were £2, what would be the break-even level of sales?

## 44.2 The break-even chart

The information given in Exhibit 44.1 can also be shown in the form of a chart. Many people seem to grasp the idea of break-even analysis rather more easily when they see it in chart form. This is particularly true for anyone who is not used to dealing with accounting information. We will, therefore, plot the figures from Exhibit 44.1 on a chart which is shown as Exhibit 44.2.

The use of the chart can now be looked at. It would be extremely useful if you could draw the chart as shown in Exhibit 44.2 on a piece of graph paper. The larger the scale that you use, the easier it will be to take accurate readings. Plot the lines from the figures as shown in Exhibit 44.1.

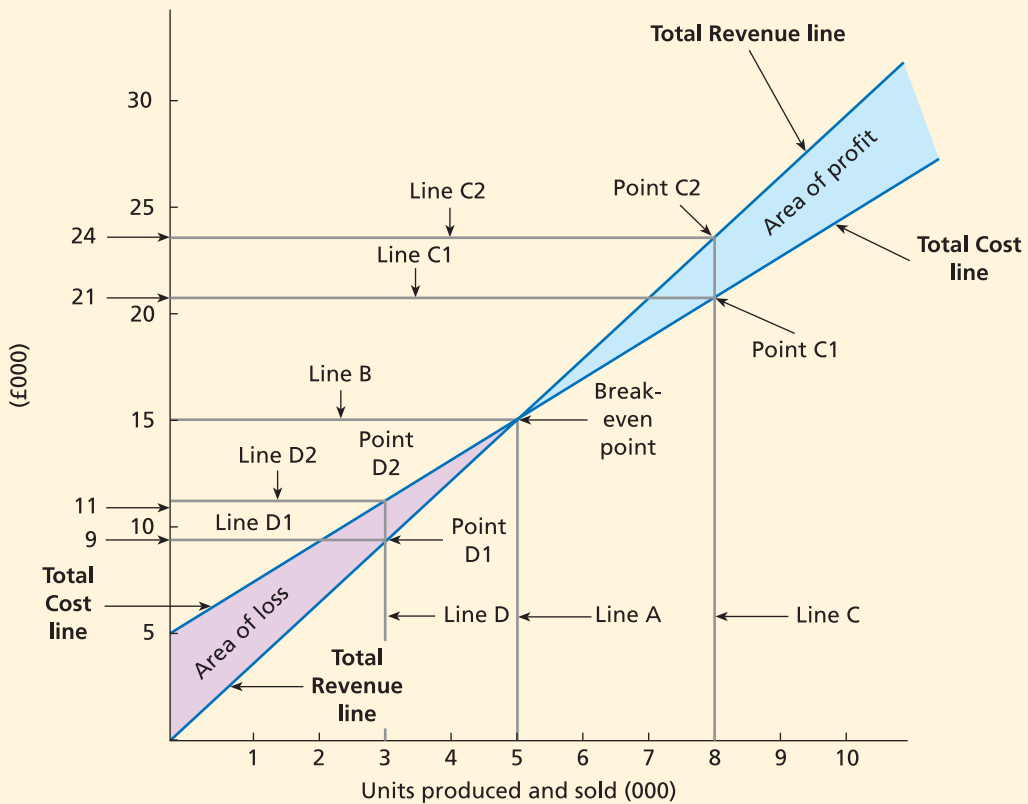
**Exhibit 44.2**



**To find the break-even point in terms of units of product, draw a line straight down from the break-even point so that it meets the horizontal axis at right angles.** This is shown in Exhibit 44.3 as line A which, when read off, gives units of products and sales as 5,000 units.

Now draw a line direct to the vertical £s axis so that it meets that at a right angle. This is line B and shows £15,000. This means that according to the chart the break-even point is shown at 5,000 units where both costs and revenue are equal at £15,000. This is, of course, the same answer as given in the table in Exhibit 44.1.

As production and sales go above 5,000 units, the firm makes profits. When production and sales are above 5,000 units, the difference represents the '**margin of safety**'. **This is the number of units in excess of the break-even point. If volume fell by more than the margin of safety, the business would incur losses.**

**Exhibit 44.3****Activity 44.2**

Look at the chart again and, without looking back at what you have just read, attempt to answer the following two questions by taking readings off your chart:

- (i) What would the total costs of the firm be at (a) 2,000 units, (b) 7,000 units, (c) 8,500 units?

**(Remember: take a line up from the product line for the figure needed then, from where the cost line is bisected, draw a line to the £s line to meet it at right angles.)**

- (ii) What is the revenue for (a) 3,000 units, (b) 6,000 units, (c) 7,500 units?

Before proceeding further, look at the answers to this activity.

Now we will try to find the amount of profit or loss at various levels by looking at the chart in Exhibit 44.3. First, let's calculate the profit made if 8,000 units are going to be made and sold. Draw a line up from the product line (horizontal axis) at right angles (shown as line C) until it bisects both the Total Cost line and the Total Revenue line, the points of intersection being shown as C1 for the Total Cost line and C2 for the Total Revenue line. Read off the amounts in £s by taking lines across to the £s vertical axis until they meet it at right angles. These are shown

as lines C1 and C2. The line from C1 will give a reading of £21,000 and from C2 of £24,000. As the Total Revenue exceeds the Total Costs there is a profit. In this case, the profit is £3,000.

If we now try for 3,000 units, the line drawn up from the product line will meet the Total Revenue line at point D1 and the Total Cost line at D2. Reading off to the £s line D1 shows as £9,000 while D2 shows as £11,000. In this case, the Total Cost exceeds the Total Revenue by £2,000 and there is, therefore, a loss of £2,000.

### Activity 44.3

Look at your chart again and use it to find the profit or loss recorded at

(a) 1,000 units, (b) 4,000 units, (c) 6,500 units and (d) 8,500 units.

Before proceeding, look at the answers to this activity at the end of the chapter.

## 44.3 Changes and break-even charts

The effect of changes on profits can easily be shown by drawing fresh lines on the chart to show the changes, or intended changes, in the circumstances of the firm. Let's first consider some factors that can bring about a change in profits:

- (a) the selling price per unit could be increased (or decreased);
- (b) a possible decrease (or increase) in fixed costs;
- (c) a possible decrease (or increase) in variable costs per unit;
- (d) increase the volume of production and sales.

We will investigate these by starting with some basic information for a business and then seeing what would happen if each of the changes (a) to (d) were to happen.

The basic information is shown in Exhibit 44.4.

### Exhibit 44.4

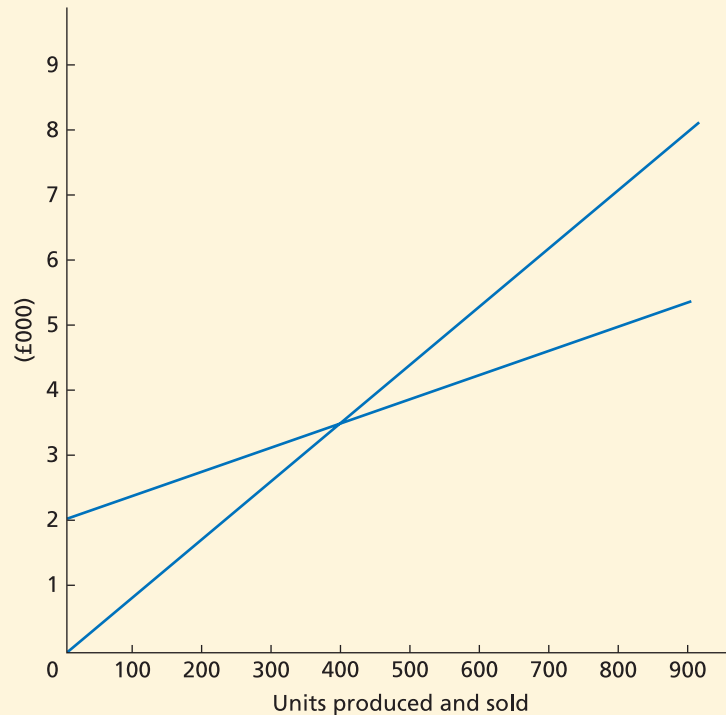
No. of units	Fixed cost	Variable cost	Total cost: Variable + Fixed	Revenue (Sales)	Profit	Loss
	£	£	£	£	£	£
100	2,000	400	2,400	900		1,500
200	2,000	800	2,800	1,800		1,000
300	2,000	1,200	3,200	2,700		500
400	2,000	1,600	3,600	3,600	nil	nil
500	2,000	2,000	4,000	4,500	500	
600	2,000	2,400	4,400	5,400	1,000	
700	2,000	2,800	4,800	6,300	1,500	
800	2,000	3,200	5,200	7,200	2,000	
900	2,000	3,600	5,600	8,100	2,500	

The table in Exhibit 44.4 shows that variable costs are £4 per unit and selling price £9 per unit. (These figures are found by dividing the variable cost and revenue values at any number of units

by that number of units. For example, dividing £400 variable cost by 100 gives £4 variable cost per unit.)

We can draw a chart to incorporate this information before considering the changes being contemplated. This is shown in Exhibit 44.5.

**Exhibit 44.5**

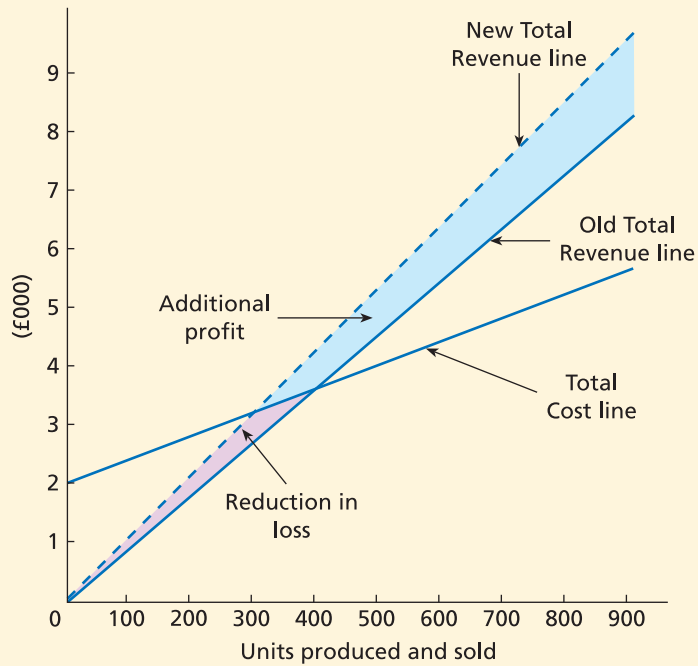
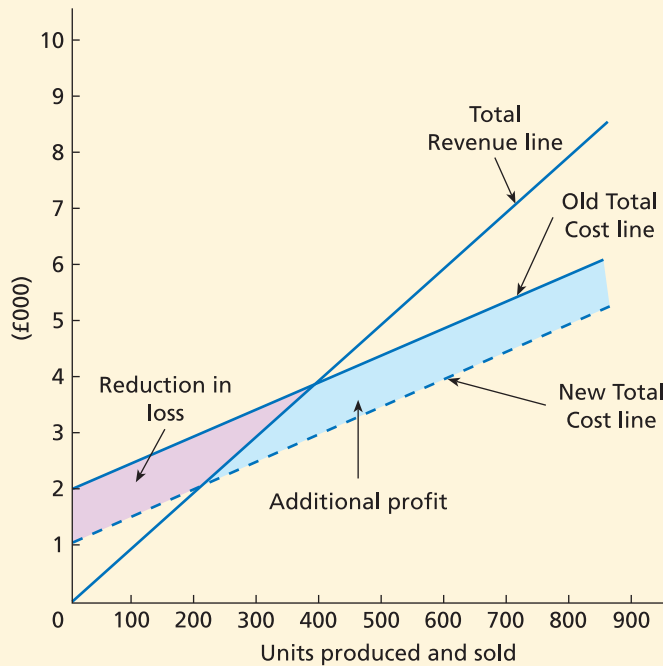


### (a) Increase selling price

Taking the chart shown in Exhibit 44.5 as a base, we can now draw an extra line on it to represent an increase in selling price. Let us suppose that the selling price could be increased by £2 per unit. This can now be shown on a break-even chart in Exhibit 44.6. The line shown as New Total Revenue can then be added. This would mean that the break-even point would change as the increased revenue means that costs can be covered sooner. The dotted area shows the reduction in the loss area that would be incurred at the same volume of sales, while the shaded area shows the increase in profit at the various volumes of sales.

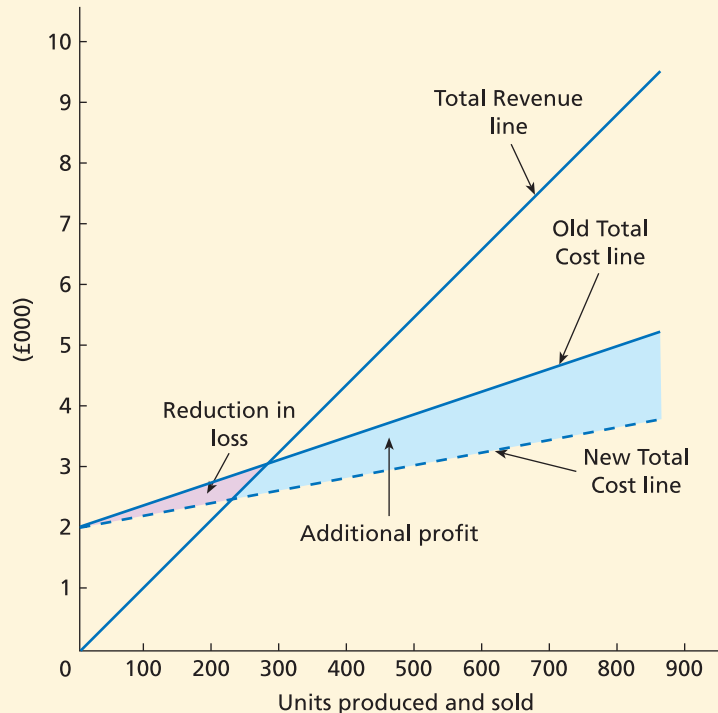
### (b) Reduce fixed costs

We can now draw some more lines on the chart shown in Exhibit 44.6, this time to reflect a reduction of £800 in fixed costs. This can be seen in Exhibit 44.7, where a line entitled New Total Cost has been added. The reduction in loss if sales were at a low volume is represented by the dotted area, while the shaded area shows the additional profit at various volumes of activity. The change in profit or loss will be constant at £800 over these volumes.

**Exhibit 44.6****Exhibit 44.7**

**(c) Reduce variable costs**

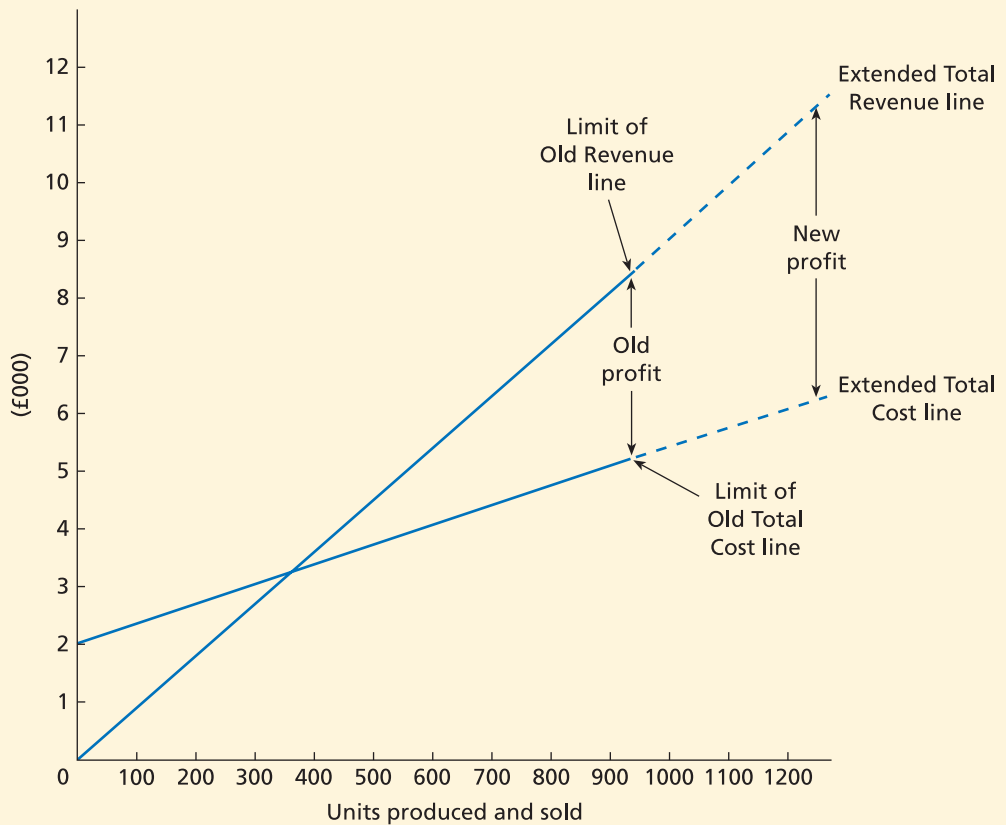
Reverting to the chart shown in Exhibit 44.6 (where the fixed costs are £2,000), we can see what happens if the variable costs per unit are reduced, in this case by £2 per unit. This is shown in Exhibit 44.8, where the dotted area shows the reduction in loss compared with the position if the costs had not changed, while the shaded area shows the additional profit at different levels of activity.

**Exhibit 44.8**

You will recall that an £800 reduction in fixed costs in Exhibit 44.7 showed a constant difference of £800 compared with previously over the whole range of activity. In contrast, a reduction in variable costs (as in Exhibit 44.8) brings about different increases of profit, or reduction of loss, over the whole range of activity. The greater the activity the greater the gain with variable cost savings, whereas the gain remains constant with fixed cost savings.

**(d) Increased production and sales**

Reverting once more to the original position as shown in Exhibit 44.5, when sales and/or production increase, all that is required is that the lines Total Revenue and Total Cost are extended. Exhibit 44.9 shows Exhibit 44.5 with the level of activity increased by 300 units. The new profit indicated will be greater than the old profit because all extra units are being sold at a profit.

**Exhibit 44.9**

#### 44.4 The limitations of break-even charts

In each of the cases looked at it has been assumed that only one of the factors of variable cost, fixed cost, selling price or volume of sales has altered. This is not usually the case. An increase in price may well reduce the number sold. There may well be an increase in fixed cost which has an effect which brings down variable costs. The changes in the various factors should, therefore, be studied simultaneously rather than separately.

In addition, **where there is more than one product, the proportions in which the products are sold, i.e. the product mix, can have a very important bearing on costs.** Suppose that there are two products, one has a large amount of fixed costs but hardly any variable costs, and the other has a large amount of variable costs but little fixed costs. If the proportions in which each is sold change very much then this could mean that the costs and profit could vary tremendously, even though the total figures of sales stayed constant. An illustration of this can be seen in Exhibit 44.10.

Variable costs are usually taken to be in direct proportion to volume, so that 1,000 units means (say) £5,000 variable costs and therefore 2,000 units would mean £10,000 variable costs, 3,000 units equal £15,000 variable costs and so on. This is often a reasonable estimation of the situation, but may well hold true only within fairly tight limits. For instance 3,100 units could mean £16,000 costs instead of the £15,500 that it would be if a linear relationship existed. This is also true of sales, because to increase sales beyond certain points some units may be sold



**Exhibit 44.10**

In considering the break-even analysis we may expect that the following will occur.

Fixed costs £1,000, Variable costs: Product A £5 per unit, B £20 per unit.

Selling prices: A £10 per unit, B £30 per unit.

Expected sales: A 150, B 50. Actual sales: A 30, B 90.

The expected sales are:  $A 150 \times £10 + B 50 \times £30 = £3,000$ .

The actual sales are:  $A 30 \times £10 + B 90 \times £30 = £3,000$ .

The actual sales revenue and expected sales revenue are the same, but the sales mix is different, as are the costs and profit:

Expected:		£
Sales		3,000
Less Variable costs:		
A $150 \times £5 =$	750	
B $50 \times £20 =$	<u>1,000</u>	
		(1,750)
Contribution		1,250
Less Fixed costs		<u>1,000</u>
Net profit		<u>250</u>
Actual:		
Sales		3,000
Less Variable costs:		
A $30 \times £5 =$	150	
B $90 \times £20 =$	<u>1,800</u>	
		(1,950)
Contribution		1,050
Less Fixed costs		<u>(1,000)</u>
Net profit		<u>50</u>

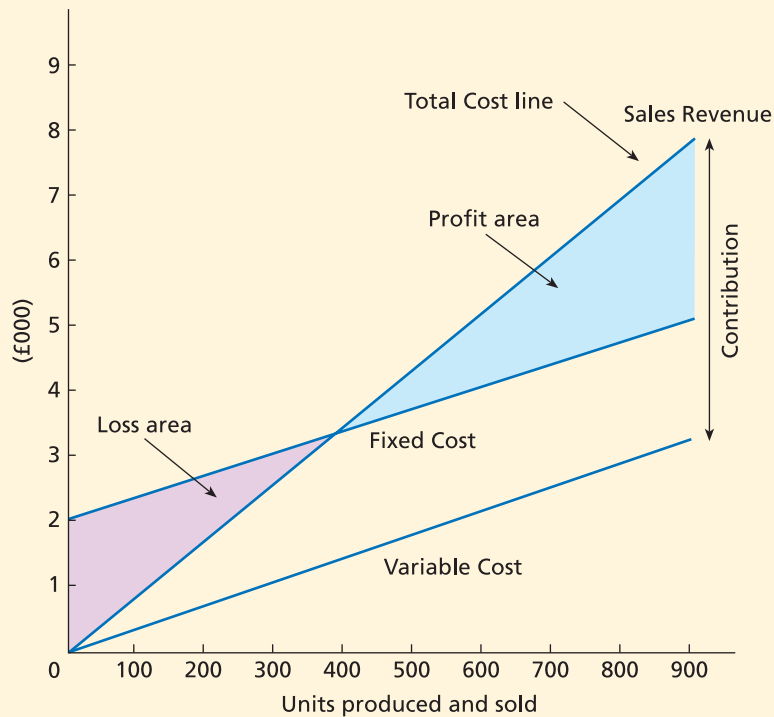
cheaply. Thus 1,000 units might be sold for £9,000; 2,000 units sold for £18,000; but to sell 2,200 units the revenue might be only £19,100 instead of the £19,800 ( $2,200 \times £9$ ) that might be expected if a linear relationship existed over all ranges.

It is assumed that everything produced is sold, and that stocks-in-trade remain constant. It would be difficult to do otherwise as both sales revenue and costs relate to one and the same measure of volume.

Another limitation is more of a complication than a hindrance. Organisations considering a change in the level of activity outside the current range may well be faced with changed fixed costs as a result. For example, a new warehouse may need to be leased in order to cope with the extra production. In that case, the break-even graphs produced need to incorporate stepped fixed costs that increase to a new fixed level once the threshold in activity for the higher cost has been reached. This can result in multiple break-even points.

## 44.5 Contribution graph

Exhibit 44.11 is a redrafting of Exhibit 44.5 that includes the addition of a line representing variable cost. It runs parallel to and below the total cost line. This is an alternative method of presentation. It highlights the total contribution. The vertical gap between the Total Cost line and the Variable Cost line at any particular number of units represents the contribution at that number of units.

**Exhibit 44.11**

## Learning outcomes

You should now have learnt:

- 1 How to prepare break-even graphs and contribution graphs.
- 2 That break-even analysis can be performed using either a formula or a graph.
- 3 How to use graphs to identify break-even point, the margin of safety and the contribution for any level of activity.
- 4 How to use a formula in order to calculate the break-even point.
- 5 That fixed costs are assumed to be fixed for the range of activity being considered, and variable costs per unit and sales revenue per unit are assumed to be constant within that range of activity. It is important to check whether these assumptions are correct when carrying out a break-even analysis. If they are not, the format of the analysis should be adjusted appropriately.
- 6 How to use break-even graphs to show the impact of changes in costs, volume and selling price upon profitability.
- 7 How to explain the relevance of contribution to decision making.

## Answers to activities

**44.1** 3,500 units.

**44.2** (i) (a) £9,000 (b) £19,000 (c) £22,000

(ii) (a) £9,000 (b) £18,000 (c) £22,500

**44.3** (a) Loss £4,000 (b) Loss £1,000 (c) Profit £1,500 (d) Profit £3,500

## Review questions

**Advice:** The very important concept of break-even attracts quite a large number of questions. Be careful when drawing any charts, as a faulty chart will give you wrong answers for every part of your answer and you are unlikely to get marks for those wrong answers. You cannot expect examiners to assume that your faulty drawing of a graph was a simple error of draughtsmanship instead of being conceptual.

**44.1** Hedges Ltd has fixed costs of £8,000. The variable costs are £4 per unit. The revenue (selling price) is £6 per unit. **You are required** (i) to draft a schedule as follows filling in the columns (a) to (f) for each stage of 1,000 units up to 10,000 units.

No. of units	(a) Fixed cost £	(b) Variable cost £	(c) Total cost £	(d) Revenue £	(e) Profit £	(f) Loss £
0						
1,000						
2,000						
3,000						
4,000						
5,000						
6,000						
7,000						
8,000						
9,000						
10,000						

(ii) **You are also required** to draw a break-even chart from the data in this schedule. Draw it carefully to scale on a piece of graph paper. Retain your answer, you will need it for some questions which follow later.

**44.2** Cover up the schedule you constructed as your answer to 44.1(i) and look instead at the break-even chart constructed as the answer to 44.1(ii). **Answer the following:**

(a) What are the total costs at production levels of (i) 4,000 units; (ii) 7,000 units; (iii) 9,000 units; (iv) 5,500 units?

(b) What is the total revenue at (i) 3,000 units; (ii) 8,000 units; (iii) 5,500 units?

**44.3A** Look at your schedule in answer to 44.1(i) and **answer the following:**

(a) What are the total costs at production levels of (i) 4,000 units; (ii) 7,000 units; (iii) 9,000 units; (iv) 5,500 units? You will have to deduce this amount as it is not shown as a figure on the schedule.

(b) What is the total revenue at (i) 3,000 units; (ii) 8,000 units; (iii) 5,500 units?

**44.4** From your break-even chart for 44.1(ii), **calculate** the profit or loss that will be made at levels of (i) 3,000 units; (ii) 10,000 units; (iii) 4,000 units; (iv) 7,000 units; (v) 8,500 units.

**44.5A** From the schedule in 44.1(i), **calculate** the profit or loss that would be made at levels of (i) 3,000 units; (ii) 10,000 units; (iii) 4,000 units; (iv) 7,000 units; (v) 8,500 units (this last figure will have to be deduced as it is not a figure on the schedule).

**44.6** Polemic Ltd manufacture and sell a single product. The following information is available for three financial years ending 30 September.

	Price per unit £	Unit volume 000s	
Sales			
Actual 19X1	130	50	
Forecast 19X2	129	52	
Forecast 19X3	128.5	53	
Costs per unit Produced	Actual 19X1	Forecast 19X2 19X3	
	£	£	£
Direct materials	50	55	55
Direct labour	30	31.5	33
Variable production overhead	10	11	12
Direct expenses	5	5	6
Variable sales overhead	15	16	16
Other costs for the year	£ 000	£ 000	£ 000
Fixed production overhead	50	55	55
Other fixed overhead	200	220	220

*Additional information:*

1 When the management of Polemic prepared its direct labour forecast unit cost for 19X2 and 19X3, direct wages were increased only by the forecast rate of inflation.

2 The trade union representatives of the production workers wished to press for a greater wage increase. They suggested that:

(i) Direct wages be increased at twice the rate of inflation. The effect of this would be to increase direct labour costs per unit as follows:

	19X2	19X3
	£	£
Direct labour	33.0	35.0

(ii) Unit selling prices be increased in order to cover the increased labour costs.

3 It is to be assumed that all expense and revenue relationships will be unchanged except where indicated.

**Required:**

(a) A schedule for 19X1, 19X2 and 19X3 for Polemic Ltd showing:

(i) the break-even points;

(ii) the net profit for each year.

Base your calculations on the original labour costs.

(b) A graph showing a break-even point for 19X2.

(c) Advise Polemic Ltd's management as to their response to the trade union's claim for higher wages. Include relevant financial analysis.

(d) Explain the limitation of break-even analysis.

(AQA (Associated Examining Board): GCE A-level)

**44.7A** The relationship between income/cost/volume suggests that there are four ways by which profit can be increased. These are:



- 1 Increase unit selling price.
- 2 Decrease unit variable cost.
- 3 Decrease fixed costs.
- 4 Increase volume.

Assume that the current situation for a product is as follows:

Sales volume	1,000 units
Selling price	£2 each
Variable cost	£1 per unit
Fixed costs	£500

**You are required to:**

- (a) draw **four** separate break-even charts showing the effect of the following changes on the current situation:
  - (i) a 10 per cent increase in volume,
  - (ii) a 10 per cent increase in unit selling price,
  - (iii) a 10 per cent decrease in unit variable cost,
  - (iv) a 10 per cent reduction in fixed costs.
- (b) Use your charts to state the additional profit resulting from **each** change.

(AQA (Northern Examinations and Assessment Board): GCE A-level)

**44.8** At the monthly senior management meeting of Hampshire plc on 1 May 19X0, various suggestions were made to improve the profit to be made by selling the firm's single product in the last quarter of the year ending 30 September 19X0. The product is not subject to seasonal demand fluctuations, but there are several competitors producing similar items. In the first quarter of the year a suggestion was made that profit could be improved if the selling price were reduced by 5 per cent, and this was put into effect at the beginning of the second quarter. As the new price undercut that of the rival firms, demand increased, and the firm's break-even point was reduced.

The following suggestions have now been raised:

- (i) Differentiate the product from its rivals by giving it a more distinctive shape, colour and packaging. This would increase material costs per unit by £0.30, but selling price would not be raised. Demand is then predicted to rise by 10 per cent;
- (ii) Improve the quality of the product by strengthening it and giving it a one-year guarantee – material costs would then increase by £0.15 per unit and labour costs by £0.30 per unit. Selling price would rise by £0.40 per unit, and demand increase by 7 per cent;
- (iii) Further reduce the selling price by 10 per cent – demand to rise by 20 per cent;
- (iv) Pay commission plus salaries instead of fixed salaries only to all sales staff. Variable selling costs would then rise by £0.20 per unit, but fixed costs would fall by £4,100 per quarter;
- (v) Subcontract the making of some components, and close the department responsible, making six staff redundant at an estimated cost to the firm of £12,000. 30,000 components are currently made per quarter. Each component's variable cost is £0.55. They can be bought from a recently established firm for £0.60 per unit. The department's share of the firm's fixed costs is 20 per cent and £2,500 fixed costs per quarter would cease to arise if the department were to be closed.

<i>Data for:</i>	<i>First quarter</i>	<i>Second quarter</i>
Number of units produced and sold	9,000	10,800
	£	£
Selling price per unit	14	13.30
Materials per unit	3.65	3.65
Labour per unit	2.10	2.10
Variable factory overhead per unit	1.40	1.40
Variable selling costs per unit	0.85	0.85
Fixed factory overhead	21,375	21,375
Fixed selling and administration costs	16,125	16,125

**Required:**

- Calculate the profit made in each of the first and second quarters, showing clearly the contribution per unit in each case.
- Draw one break-even chart showing the total costs and total revenues for the first and second quarters. You should label clearly the two break-even points and margins of safety.
- Taking each suggestion independently, calculate the profit that might be made in the last quarter if each of them were to be implemented.
- Discuss the implications for the firm of undertaking suggestions (i)–(iv), and for the firm and the local community of undertaking suggestion (v).
- Explain to the senior managers how, while break-even analysis is useful, it has limitations.

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**44.9A** You are employed by Monarch Ltd which manufactures specialist hydraulic seals for the aircraft industry. The company has developed a new seal with the following budgeted data.

Variable cost per unit	£
Direct materials	8
Direct labour	4
Variable overheads	<u>4</u>
	16

The draft budget for the following year is as follows.

Production and sales	60,000 units
	£
Fixed cost: Production	260,000
Administration	90,000
Selling, marketing and distribution	100,000
Contribution	840,000

Certain departmental managers within the company believe there is room for improvement on the budgeted figures, and the following options have been suggested.

- The sales manager has suggested that if the selling price was reduced by 10 per cent, then an extra 30 per cent units could be sold. The purchasing manager has indicated that if materials requirements were increased in line, then a materials price reduction of 6.25 per cent could be negotiated. With this additional output, fixed production costs would increase by £30,000, administration by £5,000 and selling, marketing and distribution by £10,000. Other costs would remain unchanged.
- The export manager has suggested that if the company increased overseas marketing by £15,000 then exports would increase from 15,000 units to 17,000 units. With this suggestion, distribution costs would increase by £12,000, and all other costs would remain unchanged.
- The marketing manager has suggested that if an extra £40,000 were spent on advertising, then sales quantity would increase by 25 per cent. The purchasing manager has indicated that in such circumstances, materials costs would reduce by £0.30 per unit. With this suggestion fixed production costs would increase by £25,000, administration by £4,000 and other selling, marketing and distribution costs by £7,000. All other costs would remain unchanged.
- The managing director believes the company should be aiming for a profit of £486,000. He asks what the selling price would be per unit if marketing were increased by £50,000, this leading to an estimated increase in sales quantity of 30 per cent. Other fixed costs would increase by £67,000, whilst material prices would decrease by 6.25 per cent per unit. All other costs would remain unchanged.

**Required:**

- Taking each suggestion independently, compile a profit statement for options (i) to (iii), showing clearly the contribution per unit in each case. For suggestion (iv), calculate the selling price per unit as requested by the managing director.



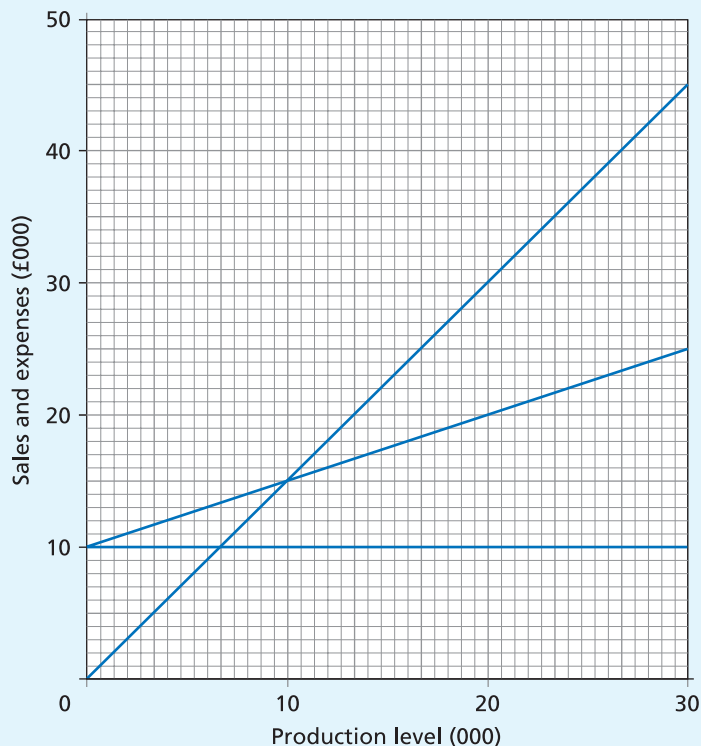
(b) Calculate the break-even quantity in units if the managing director's suggestion were implemented. Draw a contribution/sales graph to illustrate your calculations.

Read from the graph the profit if 60,000 units were sold.

(c) Whilst marginal costing has a number of applications, it also has disadvantages. In a report to the managing director, outline the main applications of marginal costing and explain its disadvantages.

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**44.10** Magwitch Limited's finance director produced the following forecast break-even chart for the year ending 31 May 19X1:



During the year the company produced and sold 20,000 units, and both revenue and expenses were 10 per cent higher than forecast.

Compeyson plc has made an agreed takeover bid for the company at a value of twelve times the net profit for the year ending 31 May 19X1.

Magwitch's assets and liabilities are to be taken over at their balance sheet values, with the exception of fixed assets, which are to be revalued at £40,000.

The summarised balance sheets of Magwitch Limited and Compeyson plc at the takeover date of 31 May 19X1 are as follows:

	Magwitch £000	Compeyson £000
Fixed assets	32	160
Current assets	65	340
Short-term liabilities	(26)	(110)
	<u>71</u>	<u>390</u>
Share capital (£1 shares)	40	200
Reserves	<u>31</u>	<u>190</u>
	<u>71</u>	<u>390</u>

The terms of the takeover are that Compeyson plc will give three of its shares (value £1.80 each) for every two shares in Magwitch Limited, plus a cash payment to make up the total agreed takeover price.

Magwitch Limited will cease to trade on 31 May 19X1, and its assets and liabilities will be assumed by Compeyson plc. Any goodwill arising is to be written off immediately against reserves.

- Draw up a summarised profit and loss account for Magwitch Limited for the year ended 31 May 19X1.
- Draw up a balance sheet for Compeyson plc after the takeover of Magwitch Limited has taken place.
- Calculate how many shares and how much cash would be received by a holder of 6,000 shares in Magwitch Limited as a result of the takeover.

(Edexcel: GCE A-level)

#### 44.11A

- How far is it true to state that a company's break-even point occurs where the contribution just equals the fixed costs?
- A company's detailed information of costs and sales has been destroyed because of a computer malfunction. The following data has, however, been gleaned from various sources:

Sales volume (units)	10,000	12,000
Costs (£):		
direct materials	30,000	36,000
direct labour	28,000	33,000
overheads	20,500	24,100

Selling price per unit at all volumes of output is £12.30

**Calculate:**

- the cost of an additional 2,000 units of output;
- the variable costs of 10,000 units of output;
- the fixed element – if any – of each component cost;
- the break-even point.

(Edexcel: GCE A-level)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)



# Interest, annuities and leasing

## Learning objectives

After you have studied this chapter, you should be able to:

- explain the difference between simple and compound interest
- explain what is meant by and be able to calculate the annual percentage rate (APR)
- calculate the present value of a series of cash flows
- describe what an annuity is and be able to calculate the value of ordinary annuities
- describe the difference between operating and finance leases and be able to calculate the relevant figures for use in financial statements

## Introduction

In this chapter, you'll learn about the nature of interest rates, of the difference between *simple* interest and *compound* interest and how to calculate them. You'll also learn how to calculate the annual percentage rate (APR) and how to calculate the cost and value of annuities and leases. Finally, you'll learn about the accounting rules relating to leases.

### 45.1 Different values

Would you rather be given £10 today or in 12 months' time? As time passes, money loses value due to the effects of inflation – prices generally rise over time. When a transaction involves a delay in payment for the item purchased (e.g. a new car), the (inflation-caused) loss in value of the amount paid will be recovered by the seller charging the buyer interest. The delay also represents a period during which the seller could have invested the money and earned interest. **This 'opportunity cost' of interest lost will also be charged to the buyer.**

The seller may have had to borrow money to provide the item purchased, and the interest cost incurred will be charged to the buyer. **In addition, the seller will also add interest to the amount due in order to compensate for risk** – the risk that the buyer will not pay the debt when due. Thus, the amount the buyer will be required to pay depends upon inflation, the market rate of interest, and the degree of risk in the debt as perceived by the seller.

## 45.2 Interest rates

If a seller adds 10 per cent interest to a debt of £100, the required payment if made 1 year later is  $£100 + (10 \text{ per cent} \times £100 = £10) = £110$ . The interest in this case is known as ‘**simple interest**’ – ‘simple’ because the rate (10 per cent) is for one year, which matches the length of the debt. Interest rates generally indicate the percentage of the amount due that will be charged as interest if the debt is unpaid for a year.

If a 10 per cent interest rate is used, but the buyer is allowed to wait two years before paying the debt, the second year’s interest will be based on the amount due at the end of the first year – £110 (i.e. the original debt of £100 plus the £10 interest charged for the first year). The interest for the second year is therefore  $10 \text{ per cent} \times £110 = £11$ , and the amount due at the end of the second year is the original debt (£100) + the first year’s interest (£10) + the second year’s interest (£11) = £121. This is known as ‘**compound interest**’ – ‘compound’ because the amount of interest due for years beyond the first year is calculated on the basis of how much is owed at the start of each year, i.e. the original amount plus all the interest to that date.

If a buyer offers to pay £121 in two years’ time, instead of paying £100 today, and the seller charges debtors 10 per cent interest per annum, the value today to the seller of the £121 which will be received in two years’ time is £100. However, if the seller uses a 20 per cent interest rate, the £121 will only be worth £84.03. On the other hand, if the seller uses a 5 per cent interest rate, the £121 will be worth £109.75. These different values can be checked by applying the same approach as with the 10 per cent interest rate.

At 20 per cent, the interest for the first year on a debt of £84.03 will be £16.80, and the amount due at the end of one year will be £100.84. The second year’s interest will be 20 per cent of £100.84, i.e. £20.17, and the total due at the end of the second year will be £121.

At 5 per cent, the interest for the first year on a debt of £109.75 will be £5.49, and the amount due at the end of one year will be £115.24. The second year’s interest will be 5 per cent of £115.24, i.e. £5.76, and the total due at the end of the second year will be £121.

This is not as complicated as it may appear. Easy to follow statistical tables can be used to quickly find the values involved. Alternatively, it is straightforward to prepare a spreadsheet that will provide the values required for any combination of the variables involved.

## 45.3 Simple interest

Simple interest on a debt of one year is, therefore, calculated using the formula:

$$\text{Amount of interest (Y)} = \text{Amount due (A)} \times \text{Interest rate (r)}$$

However, simple interest also applies to periods of less than a year. In order to calculate the interest on a shorter period, the period in question is expressed as a proportion of a year, and the formula is adjusted to:

$$\text{Amount of interest (Y)} = \text{Amount due (A)} \times \text{Interest rate (r)} \times \text{Fraction of a year (t)}$$

Let’s look at an example.

### Example

Interest on a debt of £100 is to be charged at 10 per cent per annum. The debt will be repaid after 60 days. The interest due can be calculated using the formula:

$$\begin{aligned} Y &= £100 \times 10\% \times (60/365) \\ &= £10 \times (60/365) \\ &= £1.64 \end{aligned}$$

## 45.4 Annual percentage rate (APR)

Sometimes, an interest rate that appears to be a 'simple interest' rate does not actually represent the 'real' rate charged. This can arise where, for example, a 10 per cent rate is charged on a debt for a year, but part of the debt must be repaid part-way through the year, and the interest charge ignores the fact that there is early payment of part of the debt. This 'real' rate is known as the '**annual percentage rate**' (APR). Hire purchase agreements are examples of debts where APR must be calculated to determine the 'real' cost incurred by the debtor.

Let's look at two examples.

### Example 1

Interest on a debt of £100 is to be charged at 10 per cent per annum. However, £40 must be paid after six months, and the balance plus the interest at the end of the year.

The interest to be paid is	10% of £100	= Y	= $\frac{£}{10}$
The amount due is	£100 for $\frac{1}{2}$ year	=	50
	£60 for $\frac{1}{2}$ year	=	<u>30</u>
The equivalent amount due for a year is		= q	= <u>80</u>
The 'real' rate of interest		= r	= $\frac{Y}{q}$
			= $\frac{10}{80}$
			= 12.5% = the APR

Another typical example of APR arises when a business is owed money by its customers and it decides to sell the debt to a factor in order to obtain cash now. In these cases, the factor will pay the business an amount equal to the amount of the debt less a discount.

### Example 2

A business is due £10,000 from a customer and the customer has agreed to make the payment in 90 days' time. The business approaches a debt factor who agrees to pay the amount due now, less a discount rate of 10 per cent. Applying the formula for debts of less than one year

$$\text{Amount of interest (Y)} = \text{Amount due (A)} \times \text{Interest rate (r)} \times \text{Fraction of a year (t)}$$

the discount charged is:

$$\begin{aligned} Y &= £10,000 \times 10\% \times (90/365) \\ &= £1,000 \times (90/365) \\ &= £246.58 \end{aligned}$$

The debt factor will pay the business £10,000 less £246.58, i.e. £9,753.42. **However, £246.58 does not represent a charge based on the amount of the advance (£9,753.42). Rather, it is based on the higher original amount of the customer's debt of £10,000.** As a proportion of the £9,753.42 advanced by the debt factor, £246.58 represents an interest rate of 10.25 per cent. This can be seen by rewriting the formula for debts of less than one year to:

$$r = \frac{Y}{A \times t}$$

which, substituting the example values, gives:

$$r = \frac{246.58}{9,753.42 \times (90/365)} = 10.25\%$$

A similar approach is used with *bills of exchange* and *trade bill* interest rate calculations.

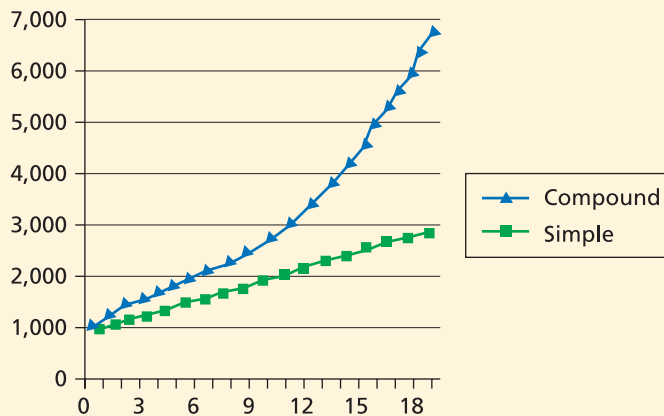
## 45.5 Compound interest and investments

As mentioned in Section 45.2, when more than a year is involved, the interest due is compounded, i.e. each year's interest charge is based on the amount outstanding, including all interest relating to previous years, at the beginning of the year.

Rather than looking at how compared interest charges to be paid are calculated, let's look at another application of compound interest – the interest earned on investments.

The graph shown in Exhibit 45.1 illustrates the difference between two investments of £1,000 at 10 per cent per annum for 20 years. In the first case, the interest is reinvested at the same 10 per cent rate and the final value of the investment is £6,727.50. In the other case, the interest is withdrawn as soon as it is paid, leaving only the original £1,000 invested, which is also the final value of the investment. However, 20 times £100, i.e. £2,000, has been received in interest over the 20 years, resulting in the overall value (ignoring inflation) being £3,000.

**Exhibit 45.1**



The final value of an investment that is subject to compound interest can be calculated laboriously by calculating the value at the end of the first year, calculating the interest on that amount for the next year, adding that interest to the amount at the start of the year to get the amount at the end of the year, and repeating the process for each year. However, there is a formula which enables the amount to be calculated swiftly:

**Final value ( $V$ ) = Amount invested ( $I$ )  $\times (1 + r)^n$ , where  $n$  = the number of years**

### Example

£1,000 invested today for five years at 10 per cent would have a final value ( $V$ ) of:

$$\begin{aligned} V &= £1,000 \times (1 + 0.10)^5 \\ &= £1,000 \times (1.1)^5 \\ &= £1,000 \times 1.61051 \\ &= £1,610.51 \end{aligned}$$

Calculations of this type are easily performed on most calculators, or by the use of tables. Where such calculations are performed regularly, it is quite common for a spreadsheet to be used to perform the calculation, often using the structure of a compound interest table within the spreadsheet to make it clear how the numbers used were derived. A compound interest table is included in Appendix 1, but a shorter example is reproduced in Exhibit 45.2.

### Exhibit 45.2 An example of a compound interest table

#### Compound Interest Table

##### Period

Length £1 compounded at the end of each period at the interest rate shown

<i>n</i>	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	<i>n</i>
1	1.010	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100	1
2	1.202	1.040	1.061	1.082	1.103	1.124	1.145	1.166	1.188	1.210	2
3	1.030	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331	3
4	1.041	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464	4
5	1.051	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611	5
6	1.062	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772	6
7	1.072	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949	7
8	1.083	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144	8
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358	9
10	1.105	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594	10
<i>n</i>	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	<i>n</i>
1	1.110	1.120	1.130	1.140	1.150	1.160	1.170	1.180	1.190	1.200	1
2	1.232	1.254	1.277	1.300	1.323	1.346	1.369	1.392	1.416	1.440	2
3	1.368	1.405	1.443	1.482	1.521	1.561	1.602	1.643	1.685	1.728	3
4	1.518	1.574	1.630	1.689	1.749	1.811	1.874	1.939	2.005	2.074	4
5	1.685	1.762	1.842	1.925	2.011	2.100	2.192	2.288	2.386	2.488	5
6	1.870	1.974	2.082	2.195	2.313	2.436	2.565	2.700	2.840	2.986	6
7	2.076	2.211	2.353	2.502	2.660	2.826	3.001	3.185	3.379	3.583	7
8	2.305	2.476	2.658	2.853	3.059	3.278	3.511	3.759	4.021	4.300	8
9	2.558	2.773	3.004	3.252	3.518	3.803	4.108	4.435	4.785	5.160	9
10	2.839	3.106	3.395	3.707	4.046	4.411	4.807	5.234	5.695	6.192	10

#### Example

As you can see highlighted in Exhibit 45.2, if you want to know how much will be held at the end of seven years if you invest £100 at 6 per cent compound interest per annum, the table in Exhibit 45.2 shows that it would be £100 times **1.504** = £150.40.

Interest often accumulates more frequently than once a year, for example, daily, monthly, or quarterly. If so, the rate of interest used in the formula must be changed to reflect this. To do this, the number of periods is multiplied by the number of payments being made each year, and the interest rate used is divided by the same amount. The formula can then be used with these adjusted values, as shown in the following example.

#### Example

If £100 is invested for two years at 12 per cent compound interest paid quarterly, the interest rate used in the calculation is 3 per cent (i.e. 12 per cent divided by four). The number of periods to use is eight (i.e. two multiplied by four). Looking up the table, the amount accumulated at the end of the two years will be £126.70.

Compare that to the compounded amount if interest was paid annually, £125.40. The difference is very small. However, the investment was for a short period of time. Had it been for a longer period, the difference would have become progressively greater. When large amounts of money are being invested over a long period, an increased frequency of interest payments will have a significant effect upon the amount of interest received.

Over time, most investments change their value. Investments, whether in the stock market, houses, or anything else, are made without knowing what the rate of return (the amount earned from the investment) will be. When the investment is ended and the final amount received is known, it is often useful to know what the rate of return was over the period of the investment.

This can be done using the table. If an investment was made for five years, it is the five-year row in the table that would be consulted. In that row, you would search for the number that represents the proportion that the final amount received represented of the initial investment. The interest rate column in which that proportion lay would represent the average rate of return on the investment.

Let's look at two examples.

### Example 1

If a house were bought for £100,000 on 1 January 20X1 and sold for £140,300 on 31 December 20X5, a five-year investment was made. The proportion that £140,300 represents of the £100,000 invested is 1.403 : 1. Looking up the table in the row where  $n = 5$ , a value of 1.403 can be seen in the 7 per cent interest rate column. The rate of return is equivalent to 7 per cent compound per annum. Where the proportion calculated is not shown in the table, the table can be used to identify an approximate rate which can then be adjusted in order to arrive at the accurate rate.

### Example 2

If a house were bought for £100,000 on 1 January 20X1 and sold for £160,000 on 31 December 20X4, a four-year investment was made. The proportion that £160,000 represents of the £100,000 invested is 1.6 : 1. Looking up the table in the row where  $n = 4$ , a value of 1.574 can be seen in the 12 per cent column and 1.630 can be seen in the 13 per cent column. The difference between these two values is 0.056 (i.e.  $1.630 - 1.574$ ). The difference between 1.574 and the amount being searched for of 1.6 is 0.026, which represents 46 per cent of the total difference of 0.056 between the 12 per cent and 13 per cent amounts. Adding 0.46 to 12 produces a percentage return of 12.46 per cent.

Rather than using the tables to identify the rate of return, a formula can be used which rewrites the final value formula [Final value ( $V$ ) = Amount invested ( $I$ )  $\times (1 + r)^n$ , where  $n$  = the number of years] to identify  $r$ :

$$r = \sqrt[n]{(V/I)} - 1$$

Substituting the values from the last example, we can confirm the answer found:

$$\begin{aligned} r &= \sqrt[4]{(160,000/100,000)} - 1 \\ &= 12.46\% \end{aligned}$$

## 45.6 Annuities

**Annuities** are an income-generating investment whereby, in return for the payment of a single lump sum, the 'annuitant' receives regular amounts of income over a predefined term (i.e. number of years). The frequency of the payments to the annuitant will depend upon the agreement reached, but would generally be either monthly, quarterly, six-monthly or annually.

The timing of the payments to the annuitant vary from annuity to annuity. For example, some involve regular payments being made to the annuitant at the start of each period, while others make the payments at the end of each period.

In some cases, the original investment is repaid at the end of the agreed term, in others it is not. It is also possible for the agreement to include the annuitant making the investment in a series of payments, rather than in a single lump sum.

As this suggests, there is a large range of possible arrangements that can be incorporated into an annuity, and it is not possible to describe how to deal with the computations relating to each of them. However, in the next section, we will focus upon one specific form of annuity – one in which equal payments are made to the annuitant at the end of each period. From that example, the basic principles involved can be identified which can then be applied to more complex situations. As a result, there should be very few circumstances when the form of an annuity means that you find it impossible to perform the necessary calculations.

Contrary to what many people think, knowledge of how to perform annuity calculation can be a very useful business skill because many forms of business transactions, including rental agreements, hire purchase agreements and leases, involve similar calculations to an annuity.

## 45.7 Calculation of the value of ordinary annuities

When calculating the value of an annuity, **it can be helpful to think of it as being similar to the calculation of compound interest, but one period in arrears**. For example, when considering compound interest on a straightforward investment, it would be assumed that an investment of £1,000 in year two was made at the start of the year. In contrast, for an annuity, all the payments are assumed to arise at the end of a year, so interest on a payment made in year two would only start to accumulate during year three – there would be no interest in year two on that part of the annuity.

The following formula can be used to calculate the value of an annuity which provides a series of regular payments and, upon which, a set rate of interest is being earned.

$$\text{Value} = \text{Annuity per period} \times \frac{(1 + r)^n - 1}{r}$$

For example, if £1,000 is being saved at the end of each year for five years and the interest rate is 10 per cent, the amount accumulated by the end of the fifth year will be:

$$\begin{aligned} \text{Value} &= £1,000 \times \frac{(1 + 0.10)^5 - 1}{0.10} \\ &= £1,000 \times 6.1051 \\ &= £6,105.10 \end{aligned}$$

This can be confirmed by treating each of the five payments as individual compound interest calculations:

Year	Invested £	Formula	Value £
1	1,000	$£1,000 \times (1 + 0.10)^4$	1,464.10
2	1,000	$£1,000 \times (1 + 0.10)^3$	1,331.00
3	1,000	$£1,000 \times (1 + 0.10)^2$	1,210.00
4	1,000	$£1,000 \times (1 + 0.10)^1$	1,100.00
5	1,000	$£1,000 \times (1 + 0.10)^0$	1,000.00
			<u>6,105.10</u>

Tables can also be used. The one provided in Appendix 1 also confirms that the value of an annuity of £1 for five years at 10 per cent would be £6.105, i.e. £1 times the multiplier of 6.105 given in the table in the Appendix.

### Example

As an alternative to calculating the value of an annuity when the amounts paid are known, it can often be useful to know how much should be set aside regularly in order to accumulate a certain amount at the end of a given period. For example, if it was intended to purchase equipment estimated to cost £10,000 in five years' time, and a 10 per cent interest rate was being offered for regular investments over a five-year period, the annuity formula can be rewritten so as to provide the amount to set aside each year:

$$\text{Annuity per period} = \frac{\text{Value} \times (r)}{(1 + r)^n - 1}$$

For our example, this gives:

$$\frac{£10,000 \times 0.10}{(1.10)^5 - 1} = £1,637.97$$

As mentioned previously, the multiplier given in the annuity table for a five-year annuity at 10 per cent is 6.105. If £1,637.97 is multiplied by 6.105, it confirms the annuity has a final value (to the nearest £1) of £10,000. It is also possible to confirm the annuity per period does result in the correct final value of £10,000 by creating a payment plus interest table:

<i>Annuity paid</i>	<i>Payment</i> £	<i>Interest</i> £	<i>Increase in fund</i> £	<i>Balance of fund</i> £
end of year 1	1,637.97	–	1,637.97	1,637.97
end of year 2	1,637.97	163.80	1,801.77	3,439.74
end of year 3	1,637.97	343.97	1,981.94	5,421.68
end of year 4	1,637.97	542.17	2,180.14	7,601.82
end of year 5	1,637.97	760.18	2,398.15	9,999.97

## 45.8 Calculation of the present value of ordinary annuities

If faced with a choice of paying for something now, or paying for it in a series of instalments, it would obviously be useful to know which is the cheaper of the two alternatives. For example, a business may purchase a new computer costing £1,000 and have a choice of paying £1,000 now, or £200 per month for six months. At first glance, the second option appears to be more expensive because £1,200 (i.e. six times £200) would be paid instead of £1,000.

However, first impressions can be misleading. In order to be able to properly compare the two alternatives, the payments must all be discounted to arrive at their cost expressed in terms of today's money. This is known as their **present values**. Whether it really is more expensive to pay by instalments will depend on the discount rate used in the calculation.

As with the calculation of the value of an ordinary annuity, tables are available for the calculation of the present value of an ordinary annuity. A full table is provided in Appendix 1 and it shows the value now of £1 per period for  $n$  periods when an organisation uses a discount rate of  $r$ . When payments are made more frequently than once per annum, the discount rate used should be reduced accordingly – that is, if payments are half-yearly, the rate is halved; if they are made every month, the rate is divided by 12.



The formula for calculating the present value of an ordinary annuity is:

$$\text{Present value} = \text{Regular payment} \times \left[ \frac{1 - \frac{1}{(1+r)^n}}{r} \right]$$

If a 12 per cent rate were used in the example at the start of this section, the rate of 12 per cent would be divided by 12 (because payments are made monthly) and the present value would be:

$$\begin{aligned} \text{Present value} &= £200 \times \left[ \frac{1 - \frac{1}{(1+0.01)^6}}{0.01} \right] \\ &= £1,159.10 \end{aligned}$$

The multiplier in the table in Appendix 1 for 1 per cent over 6 periods is 5.795 which, when multiplied by the payment of £200, gives a present value of £1,159.10.

It can be shown that this is the amount required if a table of interest and withdrawals is constructed (interest is at the same rate as above – 1 per cent per month):

<i>Period</i>	<i>Balance b/d</i> £	<i>Interest</i> £	<i>Payment</i> £	<i>Balance c/d</i> £
1	1,159.10	11.60	(200)	970.70
2	970.70	9.70	(200)	780.40
3	780.40	7.80	(200)	558.20
4	558.50	5.88	(200)	394.08
5	394.08	3.94	(200)	198.02
6	198.02	1.98	(200)	–

## 45.9 Leasing

Under a lease, the lessee agrees to pay a rental to the lessor for use of something for a period of time. Lease rental payments are treated as allowable expenses for tax, whereas assets that are purchased are only eligible for a partial deduction against tax in the form of a capital allowance. The lessor claims the capital allowances on the assets leased. The lessee charges all the lease rental payments against income.

### Activity 45.1

Why do you think leasing is usually financially advantageous for both the lessor and the lessee?

An organisation acquiring an asset will often consider whether leasing may be preferable to outright purchase. As the cost, expected useful economic life, anticipated scrap value, and leasing charges can all be identified, it is possible to identify the APR of the lease. That can then be used to assess whether it would be preferable to lease rather than buy the asset.

Let's look at an example.

### Example

A printing machine costing £200,000 has an expected useful economic life of ten years. Scrap value of the machine is expected to be zero, as the rate of obsolescence on machinery of this type

is very high. The machine could be leased for £32,547 per annum. **The APR is the interest rate that is found when the cost of the machine is equal to the present value of the annual rental payments.** That is, it is the interest rate for which the ten-year multiplier will convert £32,547 into £200,000.

£200,000 divided by £32,547 is 6.145 and, in the 10 year row of the annuity table in Appendix 1, 6.145 is the multiplier for an interest rate of 10 per cent. This is, therefore, the APR of the lease. If the multiplier being sought lies between two values in the annuity table, the APR would be identified by interpolation, you will see when you learn about accounting for leases in Section 45.11.

Normally, tax is taken into account in identifying the APR of a lease. Ignoring the time lags inherent in the tax system, as the expense is charged directly against income, if the tax rate is 40 per cent, in the above example the net of tax cost of the lease would be 60 per cent of £32,547 (i.e. £19,528) and the APR would be 60 per cent of 10 per cent, i.e. 6 per cent. This can be compared to the organisation's *cost of capital after tax* in order to assess whether to lease or purchase the machine.

So far as the option to purchase is concerned, an annualised cost approach can be used. The cost of £200,000 is assumed to occur immediately, so its real cost is £200,000. Technically, the cost is said to have occurred in 'year zero', i.e. before inflation could make any impact on monetary values.

If 100 per cent capital allowances were available on the machine, at a tax rate of 40 per cent, there would be a tax saving equivalent to 40 per cent of £200,000 in year one. **'Net present value'** (NPV) is the sum of the present values of all the cash flows. That is, it represents the net overall gain or loss on the investment in the machine after expressing all cash flows in terms of their equivalent value at year zero.

If the organisation's net of tax cost of capital is 8 per cent, the £80,000 tax saving would be discounted to £74,080 (i.e.  $£80,000 \times 0.926$ ), leaving a net present value of £125,920. The annualised cost is, therefore,  $£125,920 \div 6.710$  (which is the annuity multiplier for 10 years at 8 per cent), i.e. £18,766. When compared to the net of tax cost of the lease of £19,528, this suggests that it might be preferable to purchase the machine.

As an alternative to the above approach, the £125,920 net present value of buying the machine (as derived in the annualised cost calculation) can be compared to the NPV of the lease payments. The net of tax NPV of leasing is the net of tax rental (£19,528) multiplied by the present value multiplier of a ten-year annuity at 8 per cent (6.710), i.e. £131,033.

## 45.10 Financial implications of leasing

Despite the existence of a legal obligation to continue paying rental on a lease, neither the extent of the obligation to the lessor, nor the benefits obtainable under the lease appear in the lessee's balance sheet. However, a lease often represents the equivalent of a loan. The equivalent loan is the NPV of the outstanding lease payments discounted at the pre-tax rate of interest. For example, the NPV of a ten-year lease with rental of £32,547 and a pre-tax rate of interest of 10 per cent would be  $£32,547 \times 6.145 = £200,000$ .

## 45.11 Accounting for leases

Leases are either finance leases or operating leases. SSAP 21: *Accounting for leases and hire purchase contracts* defines the difference between them. The principal characteristic of a finance lease is that substantially all the risks and rewards of ownership are transferred to the lessee.

Various steps are described in SSAP 21 that should be followed in order to determine whether a finance lease exists. These involve determining whether the present value of the minimum lease payments amount to substantially all (normally 90 per cent) of the fair value of the asset.

However, if the substance of the lease is to have the opposite effect, then it should be categorised accordingly. At the end of the day, it is the substance (i.e. what is actually happening to the risks and rewards of ownership) rather than the form of the transaction that decides whether there exists a finance or an operating lease.

Hire purchase contracts will usually be of a financing nature and treated in the same way as finance leases.

When a lease is classified as 'operating', it is deemed to still be an asset of the lessor. Both lessor and lessee take the rentals to the profit and loss account. The lessor should also record the fixed asset and depreciate it over its useful life.

An asset held under a finance lease is deemed to 'belong' to the lessee, who should capitalise it and make a corresponding entry in creditors. The initial value used should be the present value of the minimum lease payments. Depreciation should then be provided over the shorter of the lease term and the asset's useful life, except in the case of a hire purchase contract, under which circumstances the asset should be depreciated over its useful life. As each payment is made, the proportion which relates to the creditor balance should be applied to reduce that balance. The rest of the payment should be treated as a lease charge in the profit and loss account for the period.

Lessors should initially record the amount due under a finance lease as a debtor using the amount of the net investment in the lease. As each payment is received, the proportion which relates to payment of the debtor balance should be applied to reduce that balance. The rest of the receipt should be treated as lease income in the profit and loss account for the period.

Operating leases are accounted for in the same way as most revenue expenditure and income. Finance leases, however, are much more complex. The rental payments comprise a mixture of capital and revenue, and they must be separated and recorded differently. An approach called the actuarial method is generally used. Under this approach, it is first necessary to calculate the real rate of interest implied in the lease. This requires that information is available concerning the rental payments, the lease period and the cash value of the asset at the start of the lease.

### Example

Quarterly rental on a leased computer is £400, the lease period is 12 quarters from 1 January 20X4, and the cash value of the computer at 1 January 20X4 is £4,000. The interest rate implied in the lease is that which produces a present value for the 12 payments of £400 equal to £4,000. Note, the first payment is at the start of the lease, yet ordinary annuity calculations relate to payments at the end of periods. In order to bring the example into line with this assumption, the first payment is offset against the cash value, reducing it to £3,600, and the annuity is calculated over 11 periods rather than 12.

$$\begin{array}{lcl} \text{The factor for 11 periods is } \frac{£3,600}{400} & = & 9 \\ \text{From the tables } 3\% & & = 9.253 \\ & 4\% & = 8.760 \end{array}$$

By interpolation, the gap between 3 per cent and the rate is  $253/493 = 0.513$ , therefore, the interest rate implied in the lease is 3.513 per cent. This can be verified by substituting the rate and other information into the formula given in Section 45.8:

$$\text{Present value} = \text{Payment} \times \left[ \frac{1 - \frac{1}{(1+r)^n}}{r} \right]$$

$$3,600 = 400 \times \left[ \frac{1 - \frac{1}{(1+0.03513)^{11}}}{0.03513} \right]$$

$$3,600 = £400 \times 9$$

Applying the rate of interest of 3.513 to the lease data produces the data in Exhibit 45.4.

#### Exhibit 45.4 Calculation of the periodic finance charge in the lease

Quarter		Capital sum at start of period £	Rental paid at start of period £	Capital sum during period £	Finance charge (3.513% per quarter) £	Capital sum at end of period £
20X4	-1	4,000	400	3,600	126	3,726
	2	3,726	400	3,326	117	3,443
	3	3,443	400	3,043	107	3,150
	4	3,150	400	2,750	96	2,846
20X5	-1	2,846	400	2,446	86	2,532
	2	2,532	400	2,132	75	2,207
	3	2,207	400	1,807	63	1,870
	4	1,870	400	1,470	51	1,521
20X6	-1	1,521	400	1,121	39	1,160
	2	1,160	400	760	27	787
	3	787	400	387	13	400
	4	400	400	—	—	—
			<u>4,800</u>		<u>800</u>	

The finance charges for each year of the lease are:

	£
20X4 (126 + 117 + 107 + 96)	= 446
20X5 (86 + 75 + 63 + 51)	= 275
20X6 (39 + 27 + 13)	= 79
	<u>800</u>

The overall picture in each of the three years is:

Year	Total rental £	less	Finance charge £	=	Capital repayment £
20X4	1,600		446		1,154
20X5	1,600		275		1,325
20X6	1,600		79		1,521

In the balance sheet of the lessee, the liability under the finance lease would be:

Year	Obligations under finance lease at start of year £	less	Capital repayment £	=	Obligations under finance lease at end of year £
20X4	4,000		1,154		2,846
20X5	2,846		1,325		1,521
20X6	1,521		1,521		–

## 45.12 The rule of 78

Before spreadsheets became commonplace, these actuarial method-based lease calculations were often considered too complex and, in their place, a simple rule-of-thumb approach was adopted: the rule of 78.

The '78' in its name represents the sum of the numbers 1 to 12, and is used because these calculations originally focused on twelve-month periods. Each month receives a proportion in reverse to its position. Thus, month 1 of 12 would be accorded  $\frac{12}{78}$  of the total, and month 12 of 12,  $\frac{1}{78}$ .

Similarly to the actuarial method, under the rule of 78, earlier periods will carry the majority of the allocation. For the purpose of lease calculations, the proportion is applied to the difference between the total payments under the leasing agreement and the cash value of the asset at the start.

Using the example from Exhibit 45.4, the rule of 78 produces the following:

Quarter	Rental payment number	Rule of 78	Allocation $\times$ £800	Annual allocation £
20X4 – 1	1	11	$11/66 \times £800 = 133$	
2	2	10	121	
3	3	9	109	
4	4	8	97	460
20X5 – 1	5	7	85	
2	6	6	73	
3	7	5	61	
4	8	4	49	268
20X6 – 1	9	3	36	
2	10	2	24	
3	11	1	12	
4	–	–	–	72
		<u>66</u>	<u>800</u>	<u>800</u>

(There is no allocation to the final quarter as the payments are made at the start of each quarter.) Comparison of the two methods shows that while the rule of 78 provides a general indication of the pattern flows, it is not particularly accurate.

Year	Actuarial method £	Rule of 78 £
20X4	446	460
20X5	275	268
20X6	<u>79</u>	<u>72</u>
	<u>800</u>	<u>800</u>

## Learning outcomes

You should now have learnt:

- 1 As time passes, money loses value and this loss of value must be allowed for when considering long-term investments.
- 2 Interest rates may be simple or compound, and interest may be paid at any appropriate frequency. Compound interest will generate significantly greater values than the same rate of simple interest the longer the time period involved and the greater the frequency of interest payments.
- 3 How to calculate simple interest, compound interest, APR, annuities and leases.
- 4 The real rate of interest often differs from the apparent rate and an annual percentage rate (APR) must be calculated in order to compare alternatives.
- 5 Annuity calculations are useful when considering rental agreements, hire purchase and leases.
- 6 Operating leases are accounted for differently from finance leases.

## Answer to activity

- 45.1** Leasing exists because both lessee and lessor can benefit from the arrangement as a result of their differing tax positions and capital-raising abilities. A small company may find it very expensive, possibly impossible, to borrow £200,000 for some new equipment, whereas a large leasing company would be able to raise the funds at a very competitive rate.

## Review questions

### 45.1

- (a) If you were lent £17,000 for 64 days at 6 per cent, how much interest would you pay?  
 (b) If a debt factor offered to discount a £4,000 bill of exchange at 12 per cent, and if the bill had an outstanding period of 120 days, how much would the debt factor pay for the bill?

**45.2A** What is the real rate of interest of discounting the bill of exchange in Question 45.1?

**45.3** Interest of £600 is charged and included in a loan of £4,200, i.e. the £4,200 received included the £600 interest charged. The loan has to be repaid at £1,050 per quarter over the next 12 months. What is the real rate of interest of the loan?

**45.4** If £5,000 is invested for four years at 7 per cent compound per annum, how much interest is earned over the five years?

**45.5A** If the interest on the investment in Question 45.4 had been compounded every six months, how much interest would have been earned over the four years?

**45.6A** Shares bought on 1 January 20X4 for £2,500 were sold on 31 December 20X8 for £4,400. What was the rate of annual compound interest on the investment?

**45.7** Should you accept an offer of £50,000 for your rights over the next 12 years to the £5,000 annual rent from shop premises you own and have leased to a local company? You could invest the £50,000 at 6 per cent per annum.





**45.8A** In relation to the rental income, what rate of interest does the offer made in Question 45.7 represent?

**45.9** A condition of an 8-year loan of £40,000 is that the borrower will pay equal annual amounts into a sinking fund so that it accumulates at the end of the 8 years to the amount of the loan. The sinking fund will earn interest at 5 per cent per annum. How much should be paid into the sinking fund each year?

**45.10A** If the interest on the sinking fund in Question 45.9 were at 7 per cent, how much would the annual payments into it be?

**45.11** What is the implied interest rate if equipment can be leased for three years at £8,000 per annum and the cash price is £21,000?

**45.12** The annual rental payments on a five-year lease are £11,000. If the rate of interest payable on borrowing for this purpose is 9 per cent, what is the capital value of the lease?

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Capital expenditure appraisal

## Learning objectives

After you have studied this chapter, you should be able to:

- explain why interest rates are important in financial decision making
- calculate and compare the net present value (NPV), internal rate of return (IRR), and payback of a series of cash flows
- choose between alternative projects on the basis of NPV, IRR and payback
- describe and compute the effects of taxation upon capital expenditure appraisal
- calculate the annualised amount of a series of cash flows and select between alternative projects on that basis

## Introduction

In this chapter, you'll learn how to assess and choose between alternative capital expenditure proposals using a variety of appraisal techniques. You'll also learn about 'relevant' and 'irrelevant' costs, sunk costs, and of the impact of uncertainty and uneven project lengths upon capital expenditure decisions.

### 46.1 Present value

You were introduced to the concept of present value in Chapter 45. You will recall that it is the amount that a future cash flow is worth in terms of today's money. £1,000 invested for five years at 10 per cent compound results in a final amount of £1,610.51, but what would be the value of that £1,610.51 at the date of the initial investment (i.e. today)? If it were known, it would be possible to tell whether the investment might be worthwhile.

To calculate present value, the formula to use has the same variables as that used to calculate compound interest which you learnt about in Section 45.5, but it is rewritten to reflect that it is really the reciprocal of the compound interest formula:

$$\text{Amount invested (I)} = \frac{\text{Final value (V)}}{(1 + r)^n}$$

However, it would be more appropriate to describe the amount calculated as 'present value' rather than 'amount invested' and the formula becomes:

$$\text{Present value (PV)} = \frac{\text{Final value (V)}}{(1 + r)^n}$$

Let's look at an example.



**Example**

A bank is offering a guaranteed return at the end of five years of £1,500 for every £1,000 invested. If you could usually expect to obtain a rate of interest of 8 per cent on your investments, what would be the present value of investing £1,000 in the bank?

$$PV = \frac{£1,500}{(1.08)^5} = £1,020.87$$

The 8 per cent interest rate used in this example is generally referred to as the **discount rate**, i.e. the rate at which the future flow of cash is discounted to arrive at its present value. As with compound interest, present value tables are generally used, and will often be created and used on spreadsheets. A present value table is included in Appendix 1. An extract is presented in Exhibit 46.1.

**Exhibit 46.1 An example of a present value table****Present Value Table****Period****Length PV of £1 discounted over the period at the rate shown**

<i>n</i>	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	<i>n</i>
1	0.990	0.980	0.971	0.961	0.952	0.943	0.935	0.926	0.917	0.909	1
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	3
4	0.961	0.924	0.889	0.855	0.823	0.792	0.763	0.735	0.708	0.683	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	5
6	0.942	0.888	0.838	0.790	0.746	0.705	0.666	0.630	0.596	0.564	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	10
<i>n</i>	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	<i>n</i>
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	2
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	3
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	4
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	5
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	6
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	7
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	8
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.226	0.209	0.194	9
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	10

Frequently, the cash flows arising from an investment arise throughout the period of the investment, not simply at the end. To calculate the overall present value of all the cash flows, each is calculated separately, and all the resulting present values are added together.

**Example**

An investment of £10,000 is made for five years. The net cash flows at the end of each of the five years are:

<i>Period</i>	<i>Amount £</i>
1	2,000
2	3,000
3	4,000
4	3,000
5	1,000

If the discount rate used is 10 per cent, the overall present value of the net cash flows is calculated as:

<i>Period</i>	<i>Amount £</i>	<i>Discount factor 10%</i>	<i>Present value £</i>
1	2,000	0.909	1,818
2	3,000	0.826	2,478
3	4,000	0.751	3,004
4	3,000	0.683	2,049
5	1,000	0.621	621
Overall present value of cash flows			<u>9,970</u>

When compared to the initial investment of £10,000, it can be seen that this investment would lose £30 (i.e. £10,000 – £9,970). To make it easier to see this figure, these calculations usually incorporate the initial investment (which is not discounted as it is already at today's value) and produce a figure known as the net present value, or NPV. Incorporating the initial investment into this example produces the following table:

<i>Period</i>	<i>Amount £</i>	<i>Discount factor 10%</i>	<i>Present value £</i>
0	(10,000)	1.000	(10,000)
1	2,000	0.909	1,818
2	3,000	0.826	2,478
3	4,000	0.751	3,004
4	3,000	0.683	2,049
5	1,000	0.621	621
Net present value			<u>( 30 )</u>

Many businesses have a rate of return that they require to achieve on investments. If a potential investment is not expected to achieve that rate of return, the investment will not be made. It is always possible to adopt the NPV approach in order to determine whether the return exceeds the required rate (which is shown by a positive NPV). **However, it is often useful to know what the actual rate of return is – the proposed investment may, for example, require that some additional financing be obtained that would be at a higher rate than the business's normal rate of return.**

The actual rate of return is known as the 'internal rate of return', or IRR. It is the discount rate that results in an NPV of zero. It can be calculated very easily using a spreadsheet – a table similar to the one above would be written in the spreadsheet, but the discount factor would be left blank. Then, by instigating an appropriate command, the spreadsheet would identify and insert the IRR into the table so as to arrive at an NPV of zero.

**However, spreadsheets are not always available and IRR may need to be calculated manually. The method to adopt is similar to that adopted in the final example in Section 45.5 – a guess is made as to an appropriate IRR and the NPV calculation is made using that rate.** If the NPV is

positive, a higher rate is selected (a lower rate is selected if the NPV is negative) and the NPV is again calculated. This continues until one positive NPV and one negative NPV are identified. The absolute difference between the two NPVs is calculated and the proportion of that difference that represents the difference between the NPV of the lower of the rates involved and zero is added to the lower rate to produce the IRR.

### Example

You have been asked if you would be willing to lend £10,000 to a taxi company in order that it may expand its fleet of taxis. The money would be repaid at the rate of £3,000 per annum for four years. What is the IRR?

Step 1 is to select a rate that may be approximately correct. There is no simple way to select such a rate, and what would often be done is that the same rate would be used as the first step with most IRR calculations, and then the choice of the second rate to use would depend on how close to zero the first attempt came, and on whether the NPV it gave was positive or negative. If an 8 per cent rate is used, the following results:

<i>Period</i>	<i>Amount £</i>	<i>Discount factor 8%</i>	<i>Present value £</i>
0	(10,000)	1.000	(10,000)
1	3,000	0.926	2,778
2	3,000	0.857	2,571
3	3,000	0.794	2,382
4	3,000	0.735	<u>2,205</u>
Net present value			( <u>64</u> )

Using the 8 per cent rate resulted in an NPV that was less than zero. The next rate chosen must, therefore, be less than 8 per cent. A 7 per cent rate produces the following:

<i>Period</i>	<i>Amount £</i>	<i>Discount factor 7%</i>	<i>Present value £</i>
0	(10,000)	1.000	(10,000)
1	3,000	0.935	2,805
2	3,000	0.873	2,619
3	3,000	0.816	2,448
4	3,000	0.763	<u>2,289</u>
Net present value			<u>161</u>

Therefore, the IRR lies between 7 per cent and 8 per cent. The difference between the two NPVs is 225 (i.e. 64 + 161). A zero NPV will result if the rate is set to 7 per cent plus 161/225 (as 7 per cent is 161 away from zero). Expressed as a decimal,  $161/225 = 0.72$  and the IRR is, therefore, 7.72 per cent.

## 46.2 Capital expenditure appraisal

### Activity 46.1

If you had £5,000 to spend today and had the choice of investing it in a five-year bond with a bank, or lending it to a friend who had just opened a restaurant and who offered you 10 per cent of the profits for five years, plus the return of your £5,000 at the end of the five years, which alternative would you choose and why?

Organisations make vast numbers of short-term decisions. They make comparatively few long-term decisions. These long-term decisions involve investing resources in something and then receiving the benefits. Examples include:

- building a new production facility
- buying a new delivery truck
- sponsoring a local football team for three years
- building a bridge
- buying an airline
- making a new product
- starting a new business.

**Generally, only the incremental cash payments and receipts arising from the decision to invest are relevant.** The relevant costs include interest, but not items that normally appear in the calculation of profit but which do not involve cash – depreciation, for example. There are two aspects of the incremental cash flows that should be distinguished: the cash outflows resulting from the decision to invest, and the cash inflows arising as a result of investing. The difference between these two groups of incremental cash flows determines whether or not an investment is made.

The techniques used to aid the selection of the appropriate long-term decision are referred to collectively as ‘**capital expenditure appraisal**’. There are three generally acceptable capital expenditure appraisal techniques in common use. Two have already been introduced in Section 46.1 – *net present value* and *internal rate of return*. Collectively, these two are known as ‘**discounted cash flow**’ (DCF) techniques, as they involve the discounting of future net cash flows of a capital project to find their present value. Both techniques assume that all cash flows occur at the end of a period.

The third technique, ‘**payback**’, involves selecting the alternative that repays the initial investment in the shortest time, provided that it does not exceed the business’s maximum acceptable payback period – its payback hurdle period. It is useful when cash resources are limited and swift repayment of the investment is vital for the maintenance of working capital. Also, because risks of problems arising increase with the length of an investment, payback reduces the risk by minimising the relevant length of investment. **In contrast to the DCF techniques, payback assumes all cash flows occur evenly over a period.**

A fourth technique, ‘accounting rate of return’ (ARR), having once been very popular, is now falling into disuse as technology becomes more sophisticated, and those performing these calculations become more aware of the benefits of using the other three techniques in preference to ARR. The technique uses profits rather than cash flows and it involves dividing the average return by the average investment over the period. For example, if £10,000 is invested and the return is £30,000 over a ten-year period, there would be a return of £3,000 per year ( $£30,000 \div 10$ ). If the £10,000 is repaid at the end of the ten years, the average investment is £10,000 (i.e.  $[\£10,000 + \£10,000] \div 2$ ). Therefore, the (annual) accounting rate of return is £3,000 divided by £10,000, i.e. 30 per cent.

**Although it is generally easy to calculate, ARR produces a percentage figure that is of little practical use.** It cannot, for example, be compared with an organisation’s cost of capital in order to assess whether a project would achieve a greater return than the cost of the capital that financed it. It also ignores the timing of cash flows – a project whose profits all arose at the start would be rejected in favour of one with a higher ARR whose profits all came at the end, even if inflation meant that those later period profits were worth significantly less in present value terms than the earlier profits of the rejected project.

### Example

When considering a capital expenditure (or ‘capital project’) proposal, the first step is to identify all the incremental cash flows that would arise were the decision taken to proceed with the

investment. As most decisions of this type involve cash flows over a number of years, once identified, the cash flows are mapped against the year in which they arise.

A new machine would cost £10,000 and installation would cost a further £1,000. It would replace an existing machine that would be sold for £2,000. The machine would generate cash income of £2,500 per annum for four years, at the end of which it would be sold for £3,000.

The cash flows are:

<i>Period</i>		<i>Amount £</i>
0	purchase + installation – sale proceeds	(9,000)
1	income	2,500
2	income	2,500
3	income	2,500
4	income (including sale proceeds)	<u>5,500</u>
		<u>4,000</u>

If the business's cost of capital is 10 per cent, that would be the discount rate used and the net present value (as previously illustrated in Section 46.6) would be:

<i>Period</i>	<i>Amount £</i>	<i>Discount factor 10%</i>	<i>Present value £</i>
0	(9,000)	1.000	(9,000.00)
1	2,500	0.909	2,272.50
2	2,500	0.826	2,065.00
3	2,500	0.751	1,877.50
4	5,500	0.683	<u>3,756.50</u>
		Overall net present value of cash flows	<u>971.50</u>

As the NPV is positive, the internal rate of return is higher than 10 per cent. A 15 per cent discount factor produces a negative NPV of £144:

<i>Period</i>	<i>Amount £</i>	<i>Discount factor 15%</i>	<i>Present value £</i>
0	(9,000)	1.000	(9,000)
1	2,500	0.870	2,175
2	2,500	0.756	1,890
3	2,500	0.658	1,645
4	5,500	0.572	<u>3,146</u>
		Overall net present value of cash flows	<u>( 144)</u>

Interpolating between these two values, as in Section 46.1, the IRR is found to be 14.35 per cent. (The absolute difference is £1,115.50 (i.e. £971.50 + £144), of which approximately 87 per cent (£971.50) is represented by the proportion relating to the 10 per cent NPV. Multiplying the difference between the two discount rates (15% – 10% = 5%) by 87 per cent gives an answer to two decimal places of 4.35 per cent. This is then added to 10 per cent to produce the IRR of 14.35 per cent.) On the basis that the business's cost of capital is 10 per cent, this project will be financially beneficial. Substituting the discount rate of 14.35 per cent into the table produces a net present value of –10, the failure to reach a value of zero being due to rounding.

<i>Period</i>	<i>Amount £</i>	<i>Discount factor 14.35%</i>	<i>Present value £</i>
0	(9,000)	1.000	(9,000.00)
1	2,500	0.875	2,187.50
2	2,500	0.765	1,912.50
3	2,500	0.669	1,672.50
4	5,500	0.585	3,217.50
Overall net present value of cash flows			(10.00)

These two DCF techniques generally arrive at the selection of the same alternative when faced with a choice between two or more projects. However, they can produce different choices, and when they do, it is the NPV choice that should be selected.

As the following schedule shows, payback on the machine occurs after 3.27 years:

<i>Period</i>	<i>Amount</i>	<i>Balance</i>	
£	£	£	
0	(9,000)	(9,000)	
1	2,500	(6,500)	
2	2,500	(4,000)	
3	2,500	(1,500)	
4	5,500	–	Payback at 3 plus 1,500/5,500 years = 3.27 years

This will then be compared to the business's hurdle period for payback. If it is later than the hurdle period, the project will be rejected. When cash flow is important, for example when the cost of capital is high, or when the risks in a project increase significantly the longer it runs, payback provides a measure of how quickly the investment in the project will be repaid, any subsequent cash flows being viewed as a bonus. However, it can result in a project being selected that is considerably less profitable than another that happens to take longer to repay the investment in it. It also ignores the time value of money. ('Real' payback will always be later than revealed by calculation as later receipts are not worth so much in today's money as early ones because of inflation.)

### Activity 46.2

How could you address these deficiencies to ensure payback was effectively applied?

Closer inspection of the approach reveals that payback ignores everything after the (first) break-even point. Applied blindly, it is not concerned about whether a project breaks even overall, only that the amount invested in a project is reduced to zero at some stage. The fact that a project may break even in three years, but then requires more investment in year five, only finally breaking even in year six, can easily be overlooked when calculating payback.

## 46.3 Taxation

One factor often overlooked in consideration of capital projects is taxation. Items of equipment acquired will give rise to tax allowances that can be used to reduce tax payable, and any incremental profits arising from a capital project will give rise to payments of tax.

Writing-down allowances are granted in place of depreciation and, when the equipment is sold or scrapped, its tax-written-down value (i.e. cost less writing-down allowances claimed) less any amount received upon its disposal is allowed as a deduction against income for tax purposes.

Once calculated, the impact of taxation on the incremental cash flows is taken into account in the same way as any other item of incremental income or expenditure.

### Example

A new machine costing £10,000 has an estimated useful economic life of four years, after which it will be scrapped. During those four years, it is expected to generate sales of £5,000 per annum. Production costs are anticipated to be 40 per cent of sales revenue. Working capital of £3,000 will be required for this activity, all of which will be recovered when the machine is scrapped. Depreciation is by the straight line method, i.e. £2,500 per annum starting in year 1. Corporation tax of 40 per cent is paid nine months after the end of each accounting period. A writing-down allowance of 25 per cent (reducing balance) will be available if the machine is acquired.

The expected annual profit is:

	£	£
Sales		5,000
Production costs	2,000	
Depreciation	<u>2,500</u>	
		(4,500)
		500
Corporation tax		( 200)
Net profit after tax		<u>300</u>

The expected cash flows that would be used for the capital expenditure appraisal are:

<i>Investment (£)</i>	<i>Year 1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Machine	(10,000)				
Working capital	( 3,000)			3,000	
Tax allowance		1,000	750	562.50	1,687.50
	<u>(13,000)</u>	<u>1,000</u>	<u>750</u>	<u>3,562.50</u>	<u>1,687.50</u>
<i>Cash flows (£)</i>					
Sales	5,000	5,000	5,000	5,000	
Production costs	( 2,000)	(2,000)	(2,000)	(2,000)	
Tax (40% × £3,000)		(1,200)	(1,200)	(1,200)	(1,200)
	<u>3,000</u>	<u>1,800</u>	<u>1,800</u>	<u>1,800</u>	<u>(1,200)</u>
<i>Net cash flows (£)</i>	<u>(10,000)</u>	<u>2,800</u>	<u>2,550</u>	<u>5,362.50</u>	<u>487.50</u>

(The overall tax allowances are £4,000, which is 40 per cent of the cost of the equipment, for which it has been assumed that there will be no scrap proceeds. Also, the cost of the machine and additional working capital would be treated as having arisen in year 0 for the purposes of the capital expenditure appraisal techniques. They are shown in year 1 in the above table so as to clarify the timing of the tax and tax allowance cash flows.)

## 46.4 Annualised figures

It can be difficult comparing projects that have different lengths. To overcome this complication, it is possible to use annualised amounts. Notionally, this approach assumes that the comparison would then be made over a period that represented the lowest common multiple of the projects – a twelve-year cycle would be used for two projects, one of three years' duration, the other four. However, as will be seen, once the annualised amounts are calculated, the decision can be taken without reference to any particular length of time.

The first step is to calculate the present value of the projects and then identify the amount of the annuity for the period of each project that has the same present value as that project's NPV. For example, if a discount rate of 10 per cent is used and the NPV of the three-year project is

£500, the annuity multiplier (from the table in Appendix 1) is 2.487 and the three-year annuity with a present value of £500 is therefore £201 (i.e.  $£500 \div 2.487$ ). If the four-year project has an NPV of £800, the four-year annuity is £252 (i.e.  $£800 \div 3.170$ ). On the basis of these annualised amounts, the four-year project would be selected.

## 46.5 Relevant and irrelevant costs

When decision making, some costs and revenues are relevant to a decision that is to be taken, whilst other costs and revenues are **irrelevant costs**. The **relevant costs** and **relevant revenues** are those costs and revenues of the future that will be affected by the decision, whereas irrelevant costs and revenues will not be so affected.

Take as an example a decision as to whether or not we should telephone a lot of our customers or not in a sales campaign. The cost of the telephone rental is irrelevant in the decision whether or not to conduct the campaign, as we will have to pay exactly the same rental whether or not we engage in the campaign. On the other hand, the cost of making the extra calls will be a relevant cost as they would not have been incurred if the campaign had not gone ahead.

With revenues, take the case of buying a new car for a salesperson. If the revenues he would help create by sales would remain unchanged no matter which car he were to have, then the revenues would be completely irrelevant in taking the decision as to the type of car to be bought.

However, to take the case of a salesperson who sells some of his products to farmers. With a four-wheel drive car he could get to farms which would otherwise be inaccessible to a two-wheel drive car. In this case the revenues would be relevant to the decision as to the type of car to be bought, as they would be affected by the decision.

## 46.6 Sunk costs

**Sunk cost** is a term which can be confusing, since it really means an irrelevant cost which has already occurred. It is a past cost, not a future cost.

Let us take the case of a machine which was bought several years ago, and now has a written-down value of £10,000. The scrap value is nil. We can either use the machine on a project we are considering or else we can scrap it. Let us suppose that the revenue from the project will be £25,000 and the future relevant costs will be £18,000. If we added the written-down value of the machine to the £18,000 costs then we would make a loss of £3,000 ( $£25,000 - £28,000$ ). Looking at it that way, we would not tackle the project.

However, the cost of the machine was a past cost. If we do not use the machine on this project the only other alternative is to scrap it. Such a past cost is said to be a *sunk cost* and is irrelevant to the decision to be taken. We therefore take on the project (assuming there is no better alternative project) and are better off by £7,000 ( $£25,000 - £18,000$ ).

## 46.7 A comparison of the methods

We will now look at a case where each of the methods already described will be used to try to select the best investment. You will see that the different methods can give different answers as to which project should be chosen.



**Exhibit 46.2**

ABC Ltd is wondering whether or not to invest in one of three possible projects. The initial investment will be £10,000, and the cost of capital is 10 per cent. There is no scrap value for fixed assets used. Details of the net cash inflows are as follows:

	<i>M</i> £	<i>N</i> £	<i>P</i> £
Year 1	3,000	5,000	4,000
Year 2	6,000	5,000	5,000
Year 3	4,000	2,000	3,000
Year 4	–	1,600	1,000
Year 5	–	–	1,400
	<u>13,000</u>	<u>13,600</u>	<u>14,400</u>

**1 Accounting rate of return method**

$$\frac{\text{Average yearly profit}}{\text{Average investment}} \times \frac{100}{1} = \frac{1,000}{5,000} = 20\% \quad \frac{900}{5,000} = 18\% \quad \frac{880}{5,000} = 17.6\%$$

**2 Payback method**

<i>M</i>	<i>N</i>	<i>P</i>
2.25 years	2 years	2 years

**3 Net present value method (cost of capital 10%)**

Discount factors  
per tables

	<i>M</i>	<i>N</i>	<i>P</i>
1.000	× (10,000) = (10,000)	× (10,000) = (10,000)	× (10,000) = (10,000)
0.909	× 3,000 = 2,727	× 5,000 = 4,545	× 4,000 = 3,636
0.826	× 6,000 = 4,956	× 5,000 = 4,130	× 5,000 = 4,130
0.751	× 4,000 = 3,004	× 2,000 = 1,502	× 3,000 = 2,253
0.683		× 1,600 = 1,092	× 1,000 = 683
0.621			× 1,400 = 869
Net present values	<u>687</u>	<u>1,269</u>	<u>1,571</u>

**4 Internal rate of return**

*Stage 1:* Use a rate of return which will give negative net present values. In this instance it is taken to be 18%.

Discount factors  
per tables at 18%

	<i>M</i>	<i>N</i>	<i>P</i>
1.000	× (10,000) = (10,000)	× (10,000) = (10,000)	× (10,000) = (10,000)
0.847	× 3,000 = 2,541	× 5,000 = 4,235	× 4,000 = 3,388
0.718	× 6,000 = 4,308	× 5,000 = 3,590	× 5,000 = 3,590
0.609	× 4,000 = 2,436	× 2,000 = 1,218	× 3,000 = 1,827
0.516		× 1,600 = 826	× 1,000 = 516
0.437			× 1,400 = 611
Net present values	( 715 )	( 131 )	( 68 )

*Stage 2:* Calculate the internal rate of return (IRR), using figures for positive present values already calculated in 3 above.

$$\begin{aligned} M & 10\% + \left( 8\% \times \frac{687}{687 + 715} \right) = 13.92\% \\ N & 10\% + \left( 8\% \times \frac{1,269}{1,269 + 131} \right) = 17.25\% \\ P & 10\% + \left( 8\% \times \frac{1,571}{1,571 + 68} \right) = 17.67\% \end{aligned}$$

If used on its own, without reference to the other methods:

- 1 Accounting rate of return would choose project M, as it gives highest rate of 20 per cent.
- 2 Payback would choose project N, as it pays back in the shortest time of two years.
- 3 Net present value would choose project P as it gives the highest net present value of £1,571.
- 4 Internal rate of return would choose project P, as it shows highest return of 17.67 per cent, which is itself higher than the cost of capital.

## 46.8 Uncertainty

Many of the values used in the calculations and formulae described in this chapter are, at best, objectively based estimates of future cash flows and interest rates. It is, for example, virtually inconceivable that the figures forecast in a capital expenditure appraisal will be confirmed to have been 100 per cent accurate when the project is completed.

Proposers of a course of action tend to be over-optimistic and, in order to avoid the risk of non-achievement of forecasted results, a number of measures have been adopted. The two most common are the adoption of a higher cost of capital rate than is actually required in practice, and reducing estimates of income by a fixed percentage and using the same percentage to increase all costs. However, such arbitrary adjustments can no more guarantee accuracy than the original estimates, and they will often cause the decision taken to be different from that which the original, possibly more meaningful, data would have produced.

A more rational adjustment that can be adopted is to change the amounts forecast according to their subjective probabilities. The probabilities would be provided by the proposers of a project.

### Example

<i>Estimated sales × Probability of occurrence =</i>		<i>Expected sales</i>
£	£	
2,000	0.2	400
4,000	0.5	2,000
6,000	0.2	1,200
8,000	<u>0.1</u>	<u>800</u>
	<u>1.0</u>	<u>4,400</u>

In this case, the expected value of £4,400 will be used, rather than the most likely value of £4,000. While this approach appears more rational than the other possible methods of dealing with uncertainty, it is dependent upon the probabilities used being soundly based.

### Activity 46.3

If two projects both require the same investment and one has an NPV of £100 and the other an NPV of £240, which should be selected? Would this always be the case?

## 46.9 Sensitivity analysis

One of the greatest benefits of spreadsheets is the facility to perform unlimited numbers of sensitivity analysis computations on a given set of data. Cash flows can be adjusted marginally to see if the change turns a positive NPV negative; interest rates can be altered to see if the same decision would be made; the timing of cash flows can be altered to see what the impact of doing so is

upon NPV. Sensitivity analysis enables information generated using the formulae and methods described in this chapter to be manipulated to maximise the understanding of the flexibility and limits of that information.

The importance of discounting has been recognised by the Institute of Chartered Accountants in England and Wales, which issued Technical Release 773: *The Use of Discounting in Financial Statements*. It is an excellent source of discussion on this topic, and on its application in practice.

## Learning outcomes

You should now have learnt:

- 1 That as time passes, money loses value and this loss of value must be allowed for when considering long-term investments.
- 2 That net present value (NPV) and internal rate of return (IRR) usually lead to the same selection being made between mutually exclusive projects. When they differ, it is the NPV selection that should be followed.
- 3 That accounting rate of return (ARR) is still used, but the rate it produces cannot be compared to the cost of capital and the technique is not recommended.
- 4 How to calculate NPV, IRR, Payback, and ARR.
- 5 The relative merits of the four methods.
- 6 What is meant by relevant and irrelevant costs.
- 7 What is meant by sunk cost.
- 8 How to select the 'best' project for an organisation to pursue at a given time from a range of possible alternative projects.
- 9 How to explain why, from a financial perspective, the selected project is the 'best' one for the organisation to pursue.
- 10 That where alternative projects are of unequal length, annualised amounts can be calculated to enable comparison.

## Answers to activities

- 46.1** It would depend on many factors, not least the rate of interest you would receive from the bank and the anticipated profits from the restaurant. You would need to consider the probability of the estimates concerning the profitability of the restaurant. You would also need to take into account your relationship with your friend and your own willingness to run the risk that you may not be able to recover your investment without damaging your relationship with your friend should you need the money back before the five years had passed. There are many non-financial factors that often need to be taken into account when considering long-term investments.
- 46.2** These deficiencies in the payback approach can be addressed by discounting all cash flows to their present values, and by ensuring that the calculation includes a check for there being multiple pay-back points. While the first is generally sensible, the second is essential if payback is to be effectively applied.
- 46.3** The project with the higher NPV should normally be chosen. Where the NPV is very small relative to the investment, it may not be so important that the one with the higher NPV is chosen. For example, if the investment required for these NPVs is £7,500 the NPVs are relatively very small indeed. Other factors would be more important, such as the likelihood that the figures would prove to be accurate; the potential impact of each alternative on the general image and reputation of the organisation; whether the projects would involve any opportunity costs that are not accounted for in the NPV calculation (such as employees being unavailable for other work), etc.

## Review questions

**46.1** The following project costs have been estimated relating to the upgrading of some equipment; all the costs are being incurred solely because of the project:

20X4			£
January	1	One year's rent on premises paid	12,000
	31	Equipment purchased	20,000
March	31	Installation of equipment completed and paid	4,000
December	31	Costs incurred in commissioning equipment	8,000
20X5			
January	1	One year's rent on premises paid	12,000
March	31	Additional commissioning costs paid	6,000
May	31	Training costs paid	3,000
June	30	Additional working capital provided	16,000
December	31	Cash proceeds from sale of old equipment	5,000

Ignoring tax, prepare a statement showing the outlays of cash on the project in 20X4 and 20X5. The new facility will be in full use from 1 July 20X5.

**46.2** Assume the company in Question 46.1 pays tax at 30 per cent, on 30 September each year, nine months after the end of its financial period. The company receives 20 per cent writing-down allowances on the cost of equipment and will receive the allowances for 20X4 expenditure to be offset against the tax payable on the profits for 20X4. 100 per cent capital allowances were received on the old equipment sold in 20X5 and the receipts from the sale of the old equipment must, therefore, be treated as taxable income of 20X5. Show the impact on the cash flows of these tax items.

**46.3** Assuming an interest rate of 6 per cent, what is the net present value of the net of tax cash flows in Question 46.2 for 20X4, 20X5, 20X6 and 20X7?

**46.4A** The annual forecasted profit from a project is:

	£	£
Sales		220,000
Labour, materials, and overheads	60,000	
Depreciation	<u>15,000</u>	
		( 75,000)
Net profit before tax		145,000
Tax at 30%		( 43,500)
Net profit after tax		<u>101,500</u>

Equipment with a four-year useful economic life and no residual value will be purchased on 1 September for £60,000. £30,000 additional working capital, which will be recovered in full at the end of the four years, will be required from 1 September. A 25 per cent writing-down allowance will be available throughout the period of the project. Tax at 30 per cent will be payable on 1 June each year, nine months after the end of the company's financial period on 31 August. Prepare a cash flow budget for the project.

**46.5A** If the interest rate is 7 per cent, what is the net present value of the net cash flows arising from the project in Question 46.4A?

**46.6A** If retained, a machine would be depreciated £3,000 for each of the next five years, at which point it would be fully written-down and scrapped. The machine could be sold at any point in the next year for £18,000, the gain being subject to tax at 30 per cent, payable the following year. If it were sold, a new machine costing £90,000 would be bought. The new machine would



receive 20 per cent writing-down allowances to be offset annually against profits. It is estimated that the new machine would save material costs of £30,000 per year compared to the current machine. Profits are subject to tax at 30 per cent, payable nine months after the end of the company's financial period. The new machinery would have a five-year life, with a residual value of zero, and would be depreciated straight line over that period. Prepare a cash flow forecast for the replacement option, and indicate how the profits reported in the financial statements would be altered were the existing machine to be replaced.

**46.7** What is the payback period on the following project cash flows? (Brackets indicate expenditure.)

Year	Net cash flows £
0	(15,000)
1	10,000
2	6,000
3	3,000
4	1,000

**46.8** Using a discount rate of 8 per cent, what is the net present value of the project in Question 46.7?

**46.9** What is the internal rate of return on the project in Question 46.7?

**46.10** What is the annualised amount of the net benefits from the project in Question 46.7?

**46.11A** What is the payback on a project requiring £40,000 initial investment that has a net cash inflow of £26,000 in year 1, £16,000 in year 2, and £10,000 in year 3?

**46.12A** Using a discount rate of 6 per cent, what is the net present value of the project in Question 46.11A?

**46.13A** What is the internal rate of return on the project in Question 46.11A?

**46.14A** What is the annualised amount of the net benefits from the project in Question 46.11A?

**46.15A** The annual profit forecast for a project is:

	£	£
Sales		160,000
Labour, materials, and overheads	46,000	
Depreciation	<u>24,000</u>	
		<u>70,000</u>
Net profit before tax		<u>90,000</u>

The project requires that a new machine be purchased for £128,000. It will be depreciated using the straight line method over five years to a residual value of £8,000. The project will cease when the machine is sold for £8,000 at the end of the fifth year. Ignoring taxation, what is the accounting rate of return? (No additional working capital is required for this project.)

**46.16A** Assuming that all sales are for cash, what is the internal rate of return on the project in Question 46.15A?

**46.17** Which of the following two mutually exclusive alternatives should be selected if a 5 per cent interest rate is used for the calculation of net present value?

	<i>Net cash flow</i> <i>Year 0</i>	<i>Net cash flow</i> <i>Year 3</i>
	£	£
Machine X project	(24,000)	42,000
Machine Y project	(76,000)	138,000

**46.18** Using internal rate of return, which of the two projects in Question 46.17 would be preferred?

**46.19A** Which of the following two mutually exclusive alternatives should be selected if a 7 per cent interest rate is used for the calculation of net present value?

	<i>Net cash flow</i> <i>Year 0</i>	<i>Net cash flow</i> <i>Year 1</i>	<i>Net cash flow</i> <i>Year 3</i>
	£	£	£
Project X	(68,000)	30,000	48,000
Project Y	(58,000)	42,000	21,000

**46.20A** Using internal rate of return, which of the two projects in Question 46.19A would be preferred?

**46.21** Equipment with an estimated useful economic life of four years has an NPV of £4,200 using an 8 per cent discount rate. What is the annualised equivalent of the £4,200 NPV?

**46.22A** Two mutually exclusive alternatives are available. Project X will require initial investment of £50,000 and run for three years at a cost of £8,000 per annum. Project Y will require initial investment of £110,000 and last for five years at a cost of £12,000 for the first two years and £2,000 in years three, four and five. Calculate the annualised cost of both projects over a five-year period, assuming that reinvestment in Project X would cost £4,000 at the end of year two and an interest rate of 6 per cent. Which alternative should be selected?

**46.23** A machine with a four-year useful life could be purchased for £50,000. It would have zero residual value at the end of the four years. Alternatively, the machine could be rented at £15,180 per annum for four years. Assuming a tax rate of 30 per cent and that tax relief is obtained in the same period as the payments, what is the implicit interest rate in the lease?

**46.24** Roadwheelers Ltd were considering buying an additional lorry but the company had not yet decided which particular lorry to purchase. The lorries had broadly similar technical specifications and each was expected to have a working life of five years.

The following information was available on the lorries being considered:

1	<i>Lorries</i>		
	<i>BN</i> <i>Roadhog</i>	<i>FX</i> <i>Sprinter</i>	<i>VR</i> <i>Rocket</i>
Purchase price	£40,000	£45,000	£50,000
Estimated scrap value after 5 years	£8,000	£9,000	£14,000
Fixed costs other than depreciation	£	£	£
Year 1	2,000	1,800	1,500
Year 2	2,000	1,800	1,500
Year 3	2,200	1,800	1,400
Year 4	2,400	2,000	1,400
Year 5	2,400	2,200	1,400
Variable costs per road mile	6p	8p	7p

2 The company charges 25p per mile for all journeys irrespective of the length of journey and the expected annual mileages over the five-year period are:



	<i>Miles</i>
Year 1	50,000
Year 2	60,000
Year 3	80,000
Year 4	80,000
Year 5	80,000

- 3 The company's cost of capital is 10 per cent per annum.  
 4 It should be assumed that all operating costs are paid and revenues received at the end of year.  
 5 Present value of £1 at interest rate of 10 per cent per annum:

Year 1	£0.909
Year 2	£0.826
Year 3	£0.751
Year 4	£0.683
Year 5	£0.621

**Required:**

- (a) (i) Appropriate computations using the net present value method for each of the lorries under consideration.  
 (ii) A report to the directors of Roadwheelers Ltd advising them as to which specific lorry should be purchased.  
 (b) A brief outline of the problems encountered in evaluating capital projects.

(AQA (Associated Examining Board): GCE A-level)

**46.25A** Hirwaun Pig Iron Co. operate a single blast furnace producing pig iron. The present blast furnace is obsolete and the company is considering its replacement. The alternatives the company is considering are:

- (i) Blast furnace type Exco. Cost £2 million.

This furnace is of a standard size capable of a monthly output of 10,000 tonnes. The company expects to sell 80 per cent of its output annually at £150 per tonne on a fixed price contract. The remaining output will be sold on the open market at the following expected prices:

	20X5	20X6	20X7	20X8
Price per tonne	£150	£140	£140	£160

- (ii) Blast furnace type Ohio. Cost £3.5 million.

This large furnace is capable of a monthly output of 20,000 tonnes. A single buyer has agreed to buy all the monthly output at a fixed price which is applicable from 1 January each year. The prices fixed for the next four years are as follows:

	<i>Payments per tonne of output</i>			
	20X5	20X6	20X7	20X8
Price per tonne	£130	£130	£140	£170

**Additional information:**

- 1 Blast furnaces operate continuously and the operating labour is regarded as a fixed cost. During the next four years the operating labour costs will be as follows:

Exco £1.2 million per annum  
 Ohio £2.5 million per annum

- 2 Other forecast operating payments (excluding labour) per tonne:

	20X5	20X6	20X7	20X8
Exco	£130	£130	£135	£135
Ohio	£120	£120	£125	£125

- 3 It can be assumed that both blast furnaces will have a life of 10 years.
- 4 The company's cost of capital is 12 per cent per annum.
- 5 It should be assumed that all costs are paid and revenues received at the end of each year.
- 6 The following is an extract from the present value table for £1:

	11%	12%	13%	14%
Year 1	£0.901	£0.893	£0.885	£0.877
Year 2	£0.812	£0.797	£0.783	£0.770
Year 3	£0.731	£0.712	£0.693	£0.675
Year 4	£0.659	£0.636	£0.613	£0.592

**Required:**

- (a) The forecast budgets for each of the years 20X5–20X8 and for each of the blast furnaces being considered. Show the expected yearly net cash flows.
- (b) Appropriate computations using the net present value method for each of the blast furnaces, Exco and Ohio, for the first four years.
- (c) A report providing a recommendation to the management of Hirwaun Pig Iron Co. as to which blast furnace should be purchased. Your report should include a critical evaluation of the method used to assess the capital project.

(AQA (Associated Examining Board): GCE A-level)

**46.26** Moray Ferries Ltd own a single ship which provides a short sea ferry service for passengers, private vehicles and commercial traffic. The present ship is nearing the end of its useful life and the company is considering the purchase of a new ship.

The forecast operating budgets using the present ship are as follows:

	20X5	20X6	20X7	20X8	20X9
Estimated revenue receipts	£m	£m	£m	£m	£m
Private traffic	2	3	4.5	6	7
Commercial traffic	<u>3</u>	<u>4</u>	<u>4.5</u>	<u>5</u>	<u>6</u>
	5	7	9.0	11	13
Estimated operating payments	<u>4</u>	<u>5</u>	<u>6.5</u>	<u>7.5</u>	<u>9</u>
	<u>1</u>	<u>2</u>	<u>2.5</u>	<u>3.5</u>	<u>4</u>

The ships being considered as a replacement are as described below.

**1 Ship A. Cost £10m**

This ship is of similar capacity to the one being replaced, but being a more modern ship it is expected that extra business would be attracted from competitors. It is anticipated therefore that estimated revenue receipts would be 10 per cent higher in each year of the present forecast. There would be no change in operating payments.

**2 Ship B. Cost £14m**

This modern ship has a carrying capacity 30 per cent greater than the present ship. It is expected that private traffic receipts would increase by £1/2m a year in each year of the forecast. Commercial traffic receipts are expected to increase by 15 per cent in each of the first two years and by 30 per cent in each of the remaining years.

Operating payments would increase by 20 per cent in each year of the forecast.

**Additional information:**

- 3 The company's cost of capital is 15 per cent per annum.
- 4 It is company policy to assume that ships have a life of 20 years.
- 5 It should be assumed that all costs are paid and revenues received at the end of each year.
- 6 The following is an extract from the present value table for £1:







	12%	14%	15%	16%
Year 1	£0.893	£0.877	£0.870	£0.862
Year 2	£0.797	£0.769	£0.756	£0.743
Year 3	£0.712	£0.675	£0.658	£0.641
Year 4	£0.636	£0.592	£0.572	£0.552
Year 5	£0.567	£0.519	£0.497	£0.476

7 All calculations should be made correct to three places of decimals.

**Required:**

- Revised operating budgets for 20X5–20X9 for each of the alternatives being considered.
- Appropriate computations using the net present value method for each of the ships, A and B.
- A report providing a recommendation to the management of Moray Ferries Ltd as to which course of action should be followed. Your report should include any reservations that you may have.

(AQA (Associated Examining Board): GCE A-level)

**46.27A** The Rovers Football Club are languishing in the middle of the Premier Division of the Football League. The Club have suffered a loss of £200,000 in their last financial year and whilst receipts from spectators have declined over the last five years, recently receipts have stabilised at approximately £1,000,000 per season. The Club is considering the purchase of the services of one of two new football players, Jimmy Jam or Johnny Star.

Jimmy Jam is 21 years old and considered to be a future international footballer. He is prepared to sign a five-year contract with Rovers for a salary of £50,000 per annum. His present club would require a transfer fee of £200,000 for the transfer of his existing contract. With J. Jam in the team the Rovers Club would expect receipts to increase by 20 per cent.

Johnny Star is 32 years old and a leading international footballer who is prepared to sign for Rovers on a two-year contract before retiring completely from football. He would expect a salary of £200,000 per annum and his present club would require a transfer fee of £100,000 for the transfer of his existing contract. Rovers believe that as a result of signing Star receipts would increase by 40 per cent.

The rate of interest applicable to the transaction is 12 per cent and the following is an extract from the present value table for £1:

	12%
Year 1	0.893
Year 2	0.797
Year 3	0.712
Year 4	0.636
Year 5	0.567

It should be assumed that all costs are paid and revenues received at the end of each year.

**Required:**

A report, incorporating an evaluation of the financial result of engaging each player by the net present value method, providing the Rovers Football Club with information to assist it in deciding which alternative to adopt. Indicate any other factors that may be taken into consideration.

(AQA (Associated Examining Board): GCE A-level)

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# The balanced scorecard

## Learning objectives

After you have studied this chapter, you should be able to:

- describe the aims of the balanced scorecard
- explain the four perspectives of the balanced scorecard
- explain the two types of measure inherent in the balanced scorecard
- explain the difference between the balanced scorecard and a traditional financial-accounting-based performance appraisal system
- describe some advantages of adopting the balanced scorecard
- describe some of the problems that can arise when the balanced scorecard is adopted

## Introduction

In this chapter, you'll learn about the balanced scorecard, its four perspectives, its two measures and its advantages compared with more traditional financial-accounting-based performance appraisal systems. You'll also learn about some of the problems that can arise when the balanced scorecard is adopted.

### 47.1 Background

Much has changed in the way that organisations operate today compared with even five years ago. The change over the past 25 years has been immense. In 1980, only the largest organisations had computers, the spreadsheet had only just been invented, the Internet was something only academics and some government employees had heard of, email was used by only a few, the *World Wide Web* was about 10 years away from being invented, electronic commerce was something from science fiction, and most business records were still recorded and maintained by hand.

The business environment of today is far more competitive, far more open, and far more volatile than it has ever been. In order to survive, businesses need to be far more efficient in the use of their resources, have a far better understanding of the needs of their customers, have far better organised internal systems and procedures, and have employees who have a far greater level of interpersonal skills than in the past. Above all, they need to have a well-defined organisational strategy and to have both defined the objectives that ensure the strategy is pursued and identified the measures required in order to ensure that the objectives not only are being achieved but will continue to be achieved in future.

This means that **organisations need to look beyond the historical perspective of their traditional financial reporting systems** which were mainly backwards-looking, focusing upon reporting achievements rather than upon the attainment and pursuit of objectives. They need to incorporate data capture and analysis of non-financial measures, such as customer profiles, customer satisfaction, employee performance, employee satisfaction, product quality, service quality, organisational transformation and development. They need to pay attention to the long term and think less about the short term.

One performance evaluation technique that supports this shift in emphasis and focus has emerged over the last 20 years, Kaplan and Norton's **balanced scorecard**. It bridges the strengths of the traditional financial measures of past performance with the benefits of measuring factors that impact upon or 'drive' future performance. It does so at all levels of the business, not just at the overall level typified by the traditional measures of financial performance.

## 47.2 The framework of the balanced scorecard

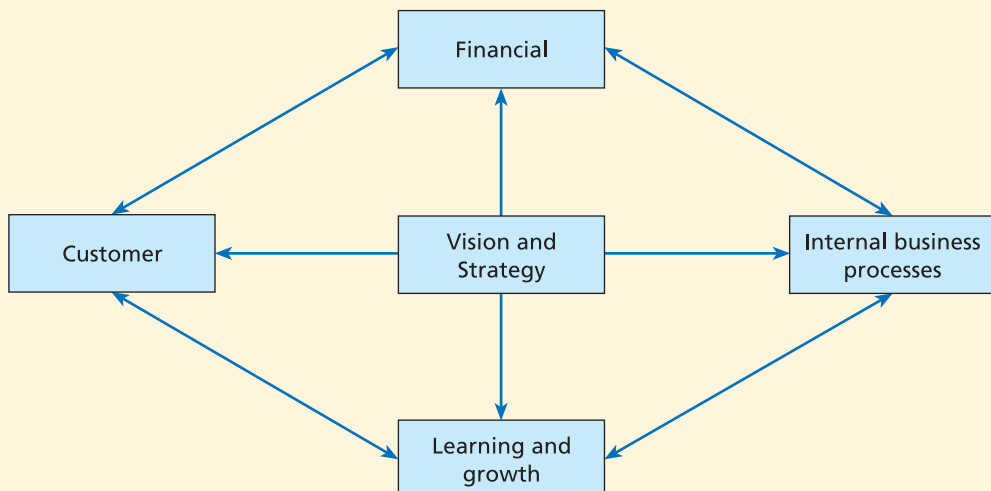
The balanced scorecard assesses performance across a balanced set of four perspectives: customers, internal processes, organisational learning and growth, and financial. It does not replace the traditional focus upon financial measurement as a critical summary of managerial and business performance. Rather, it complements it by the addition of the other three perspectives.

Thus, the traditional financial measures are still there for those that require them and for the purposes to which they are most suited but new measures are provided that enrich the information available at all levels of the organisation and so facilitate the co-ordinated achievement of organisational objectives, particularly in the long term.

### The four perspectives of the balanced scorecard

Exhibit 47.1 shows the relationship between the four perspectives, and organisational vision and strategy.

**Exhibit 47.1**



### The financial perspective

Here you identify the financial objectives that the organisation wishes to pursue and develop measures that indicate how successful the organisation has been in achieving those objectives. In essence, this is the aspect of the balanced scorecard that accounting has long been associated with and includes the use of such measures as return on capital employed, earnings per share, and the other financial ratios you learnt about in Chapter 27. It answers the question, how does the organisation appear to its owners?

Examples of possible measures are:

- return on capital employed
- return on net assets
- reduction of administrative expenses
- reduction in bad debts
- reduction in debtor days
- reduction in gearing.

### The customer perspective

You must identify the customer and market segments in which the organisation operates. Measurements should then be made of factors such as customer satisfaction, retention, acquisition, customer profitability and market share. It answers the question, how does the organisation appear to its customers?

Examples of possible measures are:

- customer satisfaction
- customer retention
- increasing customer base
- reduction in delivery times
- reduction in rate of goods returned by customers.

### The internal business processes perspective

You need to identify and measure the internal processes that are critical to the organisation being able to improve the drivers that will attract and retain customers in targeted markets and satisfy owner expectations concerning financial returns. It answers the question, at what must the organisation excel?

Examples of possible measures are:

- reduction in quality control rejection rate
- reduced production lead times
- increased level of production capacity utilisation.

### The learning and growth perspective

This identifies the human relations, technological and general systems infrastructure that the organisation must develop if it is to achieve long-term growth and organisational improvement. Appropriate measures would include those relating to the level of relevant employee skills, how up to date the organisation's IT systems and programs are, and the ability of the organisation's systems architecture to provide the information in an efficient, timely and cost-effective way. One of the key aspects in this perspective is appropriate and timely development of people and systems and development of measures to monitor and confirm that this is being done. It answers the question, how will the organisation continue to change and improve?

Examples of possible measures are:

- increased level of spending per head on employee training
- reduced employee absenteeism rate

- reduced staff turnover rate
- increased range of products
- increased proportion of new product sales as a proportion of total sales
- greater reporting flexibility in the information system
- increase in the range of information available on demand from the information system.

### 47.3 Measures

Two forms of measures are used in the balanced scorecard approach:

- (a) *outcome measures*, which assess past performance;
- (b) *performance measures (or drivers)*, which are indicators that drive future performance.

Performance measures need to be aligned to organisation strategy and, therefore, to outcomes. There is no point in having a measure that has no bearing on strategy or its pursuit. Typically, three to five measures for each of the four perspectives should be adequate. Once the organisation strategy has been identified and converted into objectives, those factors that will achieve the desired objectives (i.e. the performance measures) are identified, along with those that can confirm the objectives are being achieved (i.e. the outcome measures).

As a result of articulating the outcomes the organisation desires and pinpointing the drivers of those outcomes, the energies, abilities and specific knowledge of people throughout the organisation can be aligned to achieve the goals of the organisation.

Once they have been established, there is no reason why the measures inherent in the balanced scorecard should remain fixed. Organisational strategy may change at any time. When it does, the objectives will obviously be changed to keep them in line with the revised strategy. Clearly, the measures of both output and performance will also change as appropriate.

### 47.4 The relationship between the four perspectives

There needs to be a series of cause and effect relationships between the four perspectives and the factors within them. Specifically, there must be a clear and logical relationship between each performance driver and one or more of the outcome measures. If there is not, the overall strategy of the organisation cannot be achieved.

#### Activity 47.1

Why is this the case?

### 47.5 Benefits of adopting the balanced scorecard

There are a number of benefits to those organisations that adopt the balanced scorecard:

**1 It provides the organisation with a strategic management system that:**

- (a) clarifies and encourages consensus about organisational vision and strategy
- (b) communicates strategy, objectives, drives and measures of performance
- (c) facilitates the linking of strategic objectives to budgets
- (d) facilitates strategic reviews, especially periodic but also *ad hoc*
- (e) facilitates the identification and promotion of new strategic initiatives
- (f) facilitates fine-tuning and amendment of strategy in the light of performance.

In effect, the balanced scorecard provides management with a tool to focus strategy and move the organisation in a co-ordinated and transparent manner towards the achievement of its objectives.

- 2 **It helps people understand how they can contribute to the strategic success of the organisation.** By making it clear what items are important indicators of success, people become aware of what actually leads to the organisation achieving its objectives. They then know which aspects of their work are vital and know that to focus upon them will be beneficial to the organisation. Previously, they would have had to choose to focus upon one or more of a range of alternative activities, many of which may have made no worthwhile contribution to the achievement of the organisational goals.
- 3 **It guides the transformation of the organisation's vision and strategy into a set of performance measures.** The chain of development of the balanced scorecard is quite straightforward. First, the organisation's mission must be established, then its strategy to pursue its mission, then the objectives that will underpin its strategy, then output measures must be defined so that performance can be assessed and the performance measures (or drivers) established so that it can be seen whether the organisation is moving in the right direction. By creating and providing such a framework to management, the balanced scorecard approach supports the organisation's move towards a greater and more consistent performance that is in line with the organisation's objectives and strategy.

## 47.6

## Problems that may arise in introducing the balanced scorecard

There are a number of problems that may arise when introducing the balanced scorecard. Each of them can result in its being less than successful and care needs to be taken to ensure they do not arise, or, if they do arise, that they are eliminated as quickly as possible. The problems include:

- (a) **A lack of a clearly defined organisational vision or strategy.** It is very difficult to establish objectives if there is no overall organisational vision or strategy. Many organisations have no statement of their mission and many that do have developed no clear organisational strategy. This slows down implementation of the balanced scorecard, as it first requires that a mission, vision and strategy be developed and agreed. Not surprisingly, unless this is done, the balanced scorecard can do little to improve the overall ability of the organisation to achieve its strategic objectives.
- (b) **Developing and implementing a balanced scorecard before appropriate objectives have been identified.** It can only be wasteful and misleading to develop a balanced scorecard in this case, as there will be aspects of it that are wasteful of resources and other aspects that simply fail to address the appropriate measures. Once the mission, vision and strategy have been developed, it will become obvious that the objectives that existed previously and formed the basis for the development of a balanced scorecard were inappropriate. At that point the incorrect balanced scorecard must be amended and replaced with one that is consistent with the 'real' objectives. As most people are naturally resistant to change, this can create human relations problems that seriously undermine the effort to install an appropriate balanced scorecard. It is far better to wait for appropriate objectives to be identified before starting to develop the balanced scorecard.
- (c) **Failing to achieve consensus and acceptance at all levels of the organisation.** In this aspect, there are similarities with the need to ensure all individuals accept, understand and appropriately apply a system of budgetary control. As the extent of the measures and drivers of the four perspectives of the balanced scorecard are far greater than for a budgetary control

system, the need for consensus is considerably greater. Dysfunctional responses to the balanced scorecard seriously undermine its potential to motivate development of the organisation in the directions established by the clear definition of the organisational strategy which the balanced scorecard provides.

- (d) **When first attempted, definition of the objectives inherent in the financial, customer and internal business process perspectives often reveals gaps between the existing capabilities of people, organisational systems and procedures and the objectives that are sought.** Management must close these gaps by retraining employees, improving the organisational systems (often through more effective use of IT), and realigning organisational procedures and routines so that they are more compatible with the systems to which they relate.
- (e) **The organisational objectives across all four perspectives must be compatible and moving in the same direction in the long term.** If the balanced scorecard is to be successfully adopted, it needs to be done with a view to the long term. For example, an objective to enhance customer satisfaction may require that employees are retrained and that systems and quality control procedures are altered so as to improve product quality.

These changes will impact the financial performance measures negatively in the short term. If the organisation has a financial strategy objective to improve return on capital employed, this will only be achieved once the changes made have resulted in increased customer satisfaction which, in turn, results in increased customer loyalty, higher demand for the organisation's products, increased profitability, and an improved return on capital employed.

- (f) **The organisation's ability to offer current and accurate information to support the balanced scorecard may be undermined because it is currently capable of providing only a few of the outcomes and measures identified by the balanced scorecard analysis.** If the underlying systems and technology are incapable of providing the outcomes and measures required by the balanced scorecard, they must be reorganised and replaced if the balanced scorecard is to be implemented successfully.
- (g) **The performance measures selected are not aligned with the organisation's strategy.** One cause may be a desire to retain traditional measures because they have always been used rather than to abandon them. Developing a balanced scorecard requires that management reappraise the organisation and switch the emphasis from monitoring output and performance that fails to support the organisation's strategy in a meaningful way.

Change is crucial to the successful implementation of the balanced scorecard. The difference between a traditional financial-performance-related monitoring focus and the far broader and more focused balanced scorecard requires a major shift in perceptions and practices. Reluctance to change can seriously undermine the success of the balanced scorecard approach.

## 47.7 Strategic planning and budgeting

If you investigate when most organisations carry out these two activities, you will find that strategic planning and budgeting are typically done at different times of the year and led by different parts of the organisation.

Kaplan and Norton recommended that the budgeting process be integrated with the strategic planning process. To do so, the budgeting process should follow the strategic planning process. They also believe that the budget should represent Year 1 of a three- or a five-year plan and that companies should be budgeting not only for financial measures but also for the measures in the other three perspectives as well.

They argued that by comparing the gap between where the organisation wants to be in 3–5 years and where it is today, the managers can assign new resources and strategic initiatives to close the gaps. This motivates additional spending in Year 1. Discretionary spending, both operating and capital, is aimed at closing the forecast future gaps, rather than being devoted to the pursuit of short-term gains.

At the same time, if management specify how the initial spending and investment will start to improve measures in the customer, internal business processes and learning and growth perspectives, they will provide a ready-made yardstick by which to measure performance in pursuit of these changes.

The benefit of this approach is that costs rise in the short term but in a way that does not result in the perspectives being out of balance with each other. In the long term, all the perspectives benefit.

As a result, by integrating strategic planning and budgeting, managers can reach a consensus about the trade-offs between short-term financial performance and long-term benefit. There are potentially enormous benefits to be gained by organisations that adopt such an approach over those that stick with traditional financial-based performance measures.

## 47.8 Adoption of the balanced scorecard

It is not surprising that the balanced scorecard is becoming increasingly adopted as a means of offering a more focused approach to performance monitoring and measurement. It provides a far more focused approach than traditional financial-based performance measures and organisations that adopt it experience a greatly enhanced synergy between their mission, strategy and objectives and the means used to measure output and performance.

It is likely that adoption of the balanced scorecard will become ever more popular as organisations of all sizes and types become aware of its potential. However, it should not be overlooked that the traditional financial measures still have a significant role to play and that the balanced scorecard adds a new and complementary dimension to performance measurement rather than offering an outright alternative.

### Learning outcomes

You should now have learnt:

- 1 The aims of the balanced scorecard.
- 2 The four perspectives of the balanced scorecard.
- 3 The two types of measures inherent in the balanced scorecard.
- 4 Some advantages of adopting the balanced scorecard.
- 5 Some of the problems that can arise when the balanced scorecard is adopted.
- 6 The difference between the balanced scorecard and a traditional financial-accounting-based performance appraisal system.

### Answer to activity

- 47.1** It is very difficult to establish objectives if there is no overall organisational vision or strategy. Without a mission, vision and strategy the organisational objectives can be little more than guesses concerning whether or not they help the organisation pursue its strategy in a meaningful way. Establishing measures to achieve false objectives serves no meaningful purpose.



## Review questions

- 47.1** What is the balanced scorecard?
- 47.2** Compare the balanced scorecard to traditional financial-accounting-based performance measurement.
- 47.3** Compare and contrast the two forms of measure applied by the balanced scorecard.
- 47.4** Compare and contrast the four perspectives of the balanced scorecard.

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# THE EMERGING BUSINESS ENVIRONMENT OF ACCOUNTING



## Introduction

This part reviews increasingly popular recently developed approaches to managing the flow of information and data and enhancing the management of resources. It also looks at the emerging Internet-based business environment and the impact of e-commerce upon accounting.

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# The supply chain and enterprise resource planning systems

## Learning objectives

After you have studied this chapter, you should be able to:

- describe what is meant by the term 'supply chain'
- describe what is meant by the term 'supply chain management'
- describe some of the advantages of supply chain management
- describe what is meant by the term 'enterprise resource planning'
- describe what the differences are between an enterprise planning system and a traditional information system
- explain why organisations that integrate their ERP systems with supply chain management stand to benefit compared with those that do not
- explain why supply chain management and ERP systems are both important concepts for accounting and accountants

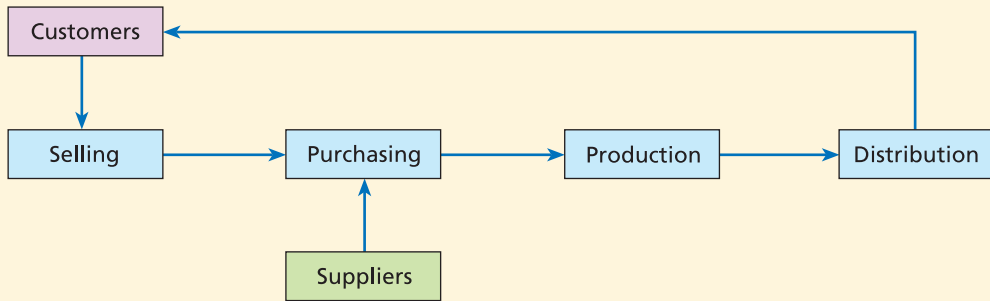
## Introduction

In this chapter you'll learn how organisations can improve their overall efficiency, reduce costs and increase revenues by adopting supply chain management. You'll also learn about the advantages of adopting enterprise resource planning and of the advantages of integrating an enterprise resource planning system with supply chain management. Finally, you'll learn why enterprise resource planning and supply chain management are important concepts for accounting and accountants.

### 48.1 Supply chain management

Manufacturing organisations purchase raw materials, convert them into finished goods, and then sell the finished goods. The term used to describe this sequence or chain of events is the **supply chain**. Everything within the two end-points of the chain is encompassed by the term. Thus, it includes demand forecasting, scheduling of production, supplier identification, ordering, inventory management, carriage, warehousing at all stages, production, and customer service. **The more the supply chain can be made a seamless and seemingly continuous process (where each stage acts as the trigger for the stage that follows it and where all the links operate automatically when appropriate), the more successful a business will be.**

An example of a supply chain is shown in Exhibit 48.1. For simplicity, warehousing has been omitted and purchasing is shown as being triggered by customer orders. Obviously, ordering often anticipates demand rather than being led by it.

**Exhibit 48.1**

To achieve effective **supply chain management**, the organisation needs to have control over information and/or item flows both within and outwith the organisation. That is, all the external parties involved in the chain – suppliers, carriers, information systems providers, and customers – need to be linked through the supply chain management system into the supply chain at the appropriate points.

Supply chain management decisions fall into two broad categories: strategic and operational. Strategic decisions guide the design of the supply chain (by virtue of the supply chain needing to comply to and adhere with the strategic decisions of the organisation). The operational decisions relate to the flow through the supply chain and need to be compatible with the strategic decisions if the supply chain is to operate effectively and appropriately.

There are four stages at which these decisions need to be taken in supply chain management:

- 1 **Location.** The location of suppliers, warehouse facilities, and production facilities. Decisions need to be taken regarding physical location, size and number of such facilities. The location of each of these classes of facility determines the possible range of routes through the supply chain from supplier to customer and has a major impact on cost, time in the supply chain and level of service.
- 2 **Production.** At the strategic level, decisions must be made concerning what to produce and where, and which suppliers to use. The decisions made have a major impact upon costs. The strategic decisions include: what products to produce, which plants should produce them, allocation of suppliers to plants, plants to distribution channels, and DCs to customer markets. They define the flow through the supply chain in yet greater detail than that defined by the location choices. Operational decisions at this stage are concerned with production scheduling, equipment maintenance scheduling, workload planning, and quality control. As with location, both categories of decision at this stage have a big impact on the costs, revenues, and the level of customer service.
- 3 **Inventory.** The key impact of the decisions at this stage is upon customer service. However, there is an obvious and clear impact upon production scheduling and upon costs that arise from whatever decisions are taken. The principal decisions to be taken concern the levels of inventory to hold. Whether any should be held at all at the start of the chain is a key strategic decision – should a just-in-time approach be taken whereby the supplier holds the stock of raw materials until ordered and orders are dispatched immediately by the supplier? The cost implications of such a decision are both obvious (there would be no need for raw material warehouse facilities) and less than obvious (there needs to be an excellent relationship with the supplier; access may well be needed to the supplier's inventory system, resulting in increased IT facility requirements and costs). Where a conventional inventory system is

adopted, warehouse facilities will be required and an effective stockholding and ordering system must be established and maintained.

### Activity 48.1

What operational decisions would need to be taken in order to establish and maintain an effective stockholding and ordering system?

- 4 **Distribution.** Decisions here are mainly strategic and relate to what form of distribution is to be used: lorry, van, train, plane, courier, etc. The decisions made need to consider distribution at all stages of the supply chain, i.e. receipts from suppliers, movements to storage facilities of finished and part-finished goods, and delivery to customers. While decisions at this stage often have less of an impact on cost to the business than some of the others that must be made, they are nonetheless crucial to the effective and efficient operation of the business and have both a direct and indirect impact upon customer service.

### Activity 48.2

In what way can distribution decisions have both a direct and indirect impact upon customer service?

## 48.2 Advantages of effective supply chain management

A number of advantages have been identified as resulting from effective supply chain management:

- reduced costs
- reduced supply chain cycle times
- reduced lead times
- improved customer service
- improved inventory management
- improved distribution systems
- greater synergy between the objectives and actions of various elements of the organisation.

**Note that product quality is *not* seen as being improved through supply chain management, but the level of customer service and the utilisation of resources are.**

## 48.3 Difficulties in establishing supply chain management

The supply chain is a complex and dynamic network of facilities, departments and organisations with different, conflicting objectives. There are three principal difficulties encountered when a supply chain management system is being established:

- (a) **Bringing together all the conflicting objectives of the parties involved** in the supply chain so as to produce an effective, efficient and manageable process.
- (b) **Establishing effective relationships at all stages and between all elements of the supply chain.** Often this represents a significant change from the previous position. Suppliers, for example, may need to provide access to their inventory database or, at the very least, agree to prioritise orders and expedite deliveries. Stock control must be strengthened and the relationships between production and ordering and production and selling must become seamless where, previously, they may have been very informal and distant. Both the systems and the interpersonal relationships of those involved must be changed to accommodate the shift to supply chain management.

- (c) **IT systems need to be changed, frequently involving considerable initial and increased ongoing expense and changes in working practices.** There is certainly a requirement for many individuals to retrain in the new systems and software. Also, auditors have an enhanced and altered role in respect of the controls that are needed in such a system compared with a traditional purchasing/production/selling/distribution environment.

## 48.4 Accounting and supply chain management

Traditional approaches to accounting can identify some of the costs relating to supply chain management. However, because accounting focuses on transactions rather than business processes, it is only the directly visible costs and savings that arise from a supply chain management system that traditional accounting can record, monitor, and report.

Where an activity-based costing system has been adopted, there is an increased level of accounting-related information available (as it focuses upon the drivers of costs within business processes). As a result, many organisations that have adopted supply chain management have also adopted activity-based costing.

Nevertheless, there are considerable hidden costs and savings of introducing and operating a supply chain management system that even ABC cannot isolate and report. For example, it is difficult to put an accurate financial value on reductions in supply chain cycle times or on an increased synergy between the objectives of the various functions of an organisation involved in or affected by a supply chain. It is also hard to quantify the benefits of having stronger links with suppliers.

**As accountants are generally involved in costing new projects, they are usually heavily involved in assessing the merits of proposals for new or amended supply chain management systems. Failure to capture the appropriate data and information means that the models and techniques of the accountant can be very inadequate in assessing the viability and worth of such proposals.**

To play a meaningful role in supply chain management, accountants need to adopt a business process perspective and gather data relating to business events rather than individual transactions. Qualitative data needs to be gathered, processed, monitored and made available as well as quantitative data. At the same time, the range of quantitative data needs to be extended to include non-financial aspects of business events and processes, such as the names and other demographic information relating to customers, suppliers and employees.

This is seen as a sufficiently important area for accountants to become involved that, in 1999, the American Institute of Management Accountants published two reports, *Implementing Integrated Supply Chain Management for Competitive Advantage* (which includes a cost and performance measurement system to effectively control the activities of the supply chain) and *Tools and Techniques for Implementing Integrated Supply Chain Management*.

Software suppliers are developing and offer a range of supply chain management software. Some products include fully integrated accounting systems, others enable existing accounting systems to be linked into the supply chain management system. Either approach results in new challenges for accountants as they become more involved in looking beyond the numbers and in communicating effectively to managers on aspects of the organisation with which they were not previously involved.

## 48.5 Enterprise resource planning

The supply chain crosses outside the organisation at two points – to the customers and to the suppliers. As such, much of the philosophy of supply chain management entails involving these outside agents in working with the organisation in the pursuit of its objectives. This is not a simple task – only the largest organisations can put pressure on their suppliers to the extent that they will agree to prioritise the organisation over all others. Similarly, most customers have a

choice and may choose to avoid dealing with organisations that look for clearer indications of demand such as allowing them to access their inventory database and automatically provide new goods when the inventory reaches its reorder level.

Not surprisingly, supply chain management is a relatively recent development and the main beneficiaries have been the larger organisations who have embraced it. While small and medium sized organisations can and do also adopt supply chain management, they have far greater difficulty in achieving the commitment of the outside entities to their objectives.

Another integrating approach, but one that is internal to the organisation, is **enterprise resource planning (ERP) system**. ERP integrates the internal functions of the organisation and achieves savings through the efficiencies that result.

An ERP system is a suite of software modules. Each relates to a function of the organisation, such as order processing, production, creditor control, debtor control, payroll, marketing and human resources. The software modules are positioned on top of a centralised database, resulting in data being entered only once into the system but being accessible to all modules within it. Because the software modules all come from the same supplier, they are fully and seamlessly integrated from the start. There is no need to bolt together a range of software from different suppliers in order to achieve data integration.

There are two groups of applications within an ERP system:

- (a) **Core applications.** The applications that need to work or the organisation will be unable to function. They include production, sales, distribution and planning. These are always fully integrated within the ERP system.
- (b) **Business analysis applications.** Examples include modelling, decision support, information retrieval, reporting, accounting, simulation and 'what if' analysis. Some ERP software includes these. Some provide links into the ERP system to third party software that performs tasks.

## 48.6 Difficulties of justifying ERP

Integrating all the functions of an organisation in this way is a non-trivial exercise. It is estimated that the average annual cost of an ERP system is £11 million. As with supply chain management, the benefits of such systems are hard to quantify in traditional accounting terms or through the use of traditional accounting data and techniques.

Instead, as with supply chain management, less quantifiable advantages must be considered and weighed up against the identifiable costs.

## 48.7 Advantages of ERP systems

The advantages of ERP systems compared to traditional information system architectures include:

- increased data consistency
- reduced data redundancy
- greatly enriched data, including access to qualitative data by functions that do not typically have access to it
- greatly increased depth and breadth of data analysis
- reduced response times to information requests
- reduced need for manual intervention in data access and analysis
- reduced risk of errors in data or in its analysis
- greatly enhanced exception reporting facility (due to the increase in the range of variables that can be flagged for monitoring)
- reduced time spent analysing exception reports (as the level of detail provided by the system is greatly enhanced)



- greatly reduced lead times in report generation
- greatly increased efficiency in materials ordering, requisition and deployment
- much closer ties between ordering, inventory control and production.

## 48.8 Organisational size

Since they first appeared, ERP systems have tended to be developed in the largest organisations. Software vendors have produced their products with this in mind. However, computing power has increased and its price has dropped to such an extent that medium-sized and even small organisations can now take advantage of the software and develop ERP systems. While ERP systems are costly, the benefits are generally seen as outweighing the costs, provided the installation of ERP systems is effective and appropriate.

It is likely that within a few years, ERP software will be as commonplace in organisations of all sizes as general accounting packages are at present and that, in some cases, it will provide all the functionality of those accounting packages along with everything else they currently provide as standard.

## 48.9 ERP systems and supply chain management

Those organisations that add supply chain management to their ERP systems achieve the greatest benefit. An efficient and effective ERP system enhances the ability to integrate all the internal functions of the supply chain while also integrating other support functions, such as human resources and accounting. **Supply chain management enhances the capability of the ERP system to record and monitor all aspects of the organisation's business and bring suppliers and customers within the co-ordinated control of the organisation.**

Many organisations are moving in this direction and their accountants are being seen as playing a vital role in the success of the emerging information systems. For their part, ERP software providers have recognised the pivotal role of the accountant and have for some years funded American universities to integrate their software into accounting courses. Whether this occurs elsewhere remains to be seen. However, there is no doubt that ERP and supply chain management are two subjects that accountants need to be aware of and prepared to be involved with.

### Learning outcomes

You should now have learnt:

- 1 What is meant by the term 'supply chain'.
- 2 What is meant by the term 'supply chain management'.
- 3 About the advantages of supply chain management.
- 4 What is meant by the term 'enterprise resource planning'.
- 5 What the differences are between an enterprise planning system and a traditional information system.
- 6 Why organisations that integrate their ERP systems with supply chain management stand to benefit compared with those that do not.
- 7 Why supply chain management and ERP systems are both important concepts for accounting and accountants.

## Answers to activities

- 48.1** Stockholding levels would need to be established for each item of raw materials: minimum level, safety stock level, reorder level (see Section 38.8).
- 48.2** Customer service is directly affected by the speed at which delivery is made and by the amount charged for the service. It is indirectly affected by the decisions made concerning shipping raw materials in from suppliers and, once again, it is the time factor that matters. A just-in-time system that allows suppliers a week to deliver raw material orders is going to result in a level of customer service that is somewhat less than one that requires delivery within 24 hours.

## Review questions

- 48.1** What is the supply chain?
- 48.2** What is meant by the term, 'supply chain management'?
- 48.3** What are the advantages of effective supply chain management?
- 48.4** Why does supply chain management bring new challenges for accounting and accountants?
- 48.5** What is enterprise resource planning?
- 48.6** What are the advantages of an ERP system?
- 48.7** Why will those organisations that integrate their ERP systems with supply chain management benefit more than those that introduce only one or the other or these two concepts?

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# E-commerce and accounting

## Learning objectives

After you have studied this chapter, you should be able to:

- explain what is meant by 'e-commerce'
- explain what is meant by 'business-to-business' transactions
- explain what is meant by 'business-to-consumer' transactions
- describe a typical business-to-consumer transaction
- describe some of the benefits of e-commerce to sellers
- describe some of the benefits of e-commerce to buyers
- describe the impact of e-commerce upon the role of the financial accountant
- describe the impact of e-commerce upon the role of the management accountant
- describe the impact of e-commerce upon the role of the auditor, both internal and external
- explain why retail businesses cannot afford to stay out of e-commerce

## Introduction

In this chapter, you'll learn about e-commerce and its impact upon sellers, buyers and accountants.

### 49.1 Background

For many years, all business was undertaken face-to-face. Gradually, orders started to be placed by other means – letter, telegram, telex, fax, telephone, etc. However, when transactions were undertaken between businesses, paper was normally exchanged indicating an order was being placed and, subsequently, indicating how much the seller required to be paid for the goods ordered.

This is the business environment in which accounting developed. Accountants learnt to use the documents relating to the transaction in order to make entries in the accounting books. They ensured there was an audit trail running from the original paperwork right through to each entry in the ledger. Checking these entries was time consuming but always possible and, where original records did not exist, auditors would get very concerned as to the validity of transactions. Sometimes they accepted the word of the proprietor that transactions were valid. On other occasions, they did not and an investigation was launched in pursuit of evidence that things were recorded inaccurately.

**Activity  
49.1**

What sorts of things were done in this investigation phase?

Other forms of business started to emerge. Ones where communication was electronic but, initially, all payment was by traditional means. Then payments too became increasingly electronic. Now, not only can communication and payment all be done electronically, but the seller may never physically possess the goods or services being sold and, in fact, the seller may not even be aware that a transaction has occurred (as the sale process is entirely automated). Also, products that were traditionally physical – books and CDs, for example – can now be sold as electronic files downloaded off the Internet directly into the customer's PC.

This is **electronic commerce** and is the environment in which an increasing proportion of business is now conducted. It was expected that the total value of e-commerce transactions would rise by 400 per cent between 2001 and 2004 to around US\$5,000 billion.

In a report issued in 2001, *The Global Online Retailing Study*, the accounting firm Ernst & Young stated that online retailing is no longer an option, but a *business requirement*. Retail businesses must move into e-commerce or watch their markets disappear into the hands of their competitors.

## 49.2 Electronic commerce

Electronic commerce can be defined as the use of electronic telecommunication technology to conduct business transactions over the Internet. It allows goods to be exchanged anytime, 24 hours a day, 7 days a week, anywhere the buyer has access to the Internet. It expands the market of every seller – in many cases, the market becomes global.

There are two principal e-commerce models:

- 1 **Business-to-business (B2B)**. Businesses purchase from other businesses and/or sell their goods and services to other businesses; and,
- 2 **Business-to-consumer (B2C)**. Businesses sell to consumers. For B2C to work:
  - (a) the customer must have access to the Internet
  - (b) the customer must have a means of making payment electronically (normally, a credit or a debit card)
  - (c) there must be a viable means of delivering the item(s) purchased to the consumer.

E-commerce involves the transmission of confidential, sensitive and valued information. To operate in this environment effectively, not only customers, but also business partners, must be convinced that a B2B or B2C business's systems are secure, reliable, available and properly controlled. While this is very much a necessity for effective supply chain management (Chapter 48), it is much more critical in an e-commerce environment and is the aspect of e-commerce that, more than any other, is impacting upon the role of the accountant and, in particular, the role of the auditor.

## 49.3 Business-to-business

B2B transactions are very similar to how transactions occur in a traditional business environment. Request for payment is often by traditional invoicing and payment follows at some date in the future.

## The seller

B2B e-commerce offers the seller many advantages over a traditional business environment, including:

- cost savings by removing the need for a human salesperson to be involved in the transaction
- faster transaction times
- lower clerical costs as there is now a reduced level of paper records to be prepared and maintained
- richer analysis of sales due to greatly enhanced knowledge about the pattern of sale.

However, the major differences that e-commerce can bring to this form of e-commerce lie in the ability to integrate the B2B e-commerce system into the seller's accounting system. There is a growing range of integrated software available, including many of the ERP software packages referred to in Chapter 48.

Doing so has many advantages for the seller, including:

- better credit control at the time of sale
- better control over debtor balances
- potential to cut costs by automating the sale process, leaving it to be triggered by the level of inventory shown in the purchaser's inventory database.

## The buyer

The buyer benefits from:

- faster transaction times
- greater confidence that orders will be filled in a timely manner
- (in many cases) a greatly increased market (geographically) in which to make a purchase
- cost savings arising from increased competition among sellers
- (often) visual confirmation that what is being ordered is what is required (as there is no longer a possibility that an ill-informed salesperson is dealing with the order/enquiry).

## The accountant

There is less of a paper trail than under a traditional system. However, this has little effect on the day-to-day work of accountants working within the seller or buyer organisation. **Thus, accountants who work for the seller or buyer are relatively unaffected by the shift from a traditional business environment.** Transaction data is entered automatically into the accounting records rather than manually by a clerk. Thereafter, the internal accountant handles the data in the normal way and can create and provide all the 'normal' accounting information that would be provided were this a traditional business environment.

### Management accountants

There is the possibility of the management accountant providing more detailed and richer information to the decision maker, as B2B transactions are information rich compared with traditional ones. For example, far more qualitative and non-financial quantitative data is available or is available from a more reliable source.

### Financial accountants

Financial accountants will not experience very much change in the nature of data from that experienced under a traditional computerised accounting environment. However, when the audit is being conducted, there will be a need to be able to explain to the auditor where the data

within the accounting system comes from and the controls that are in place to ensure that it is both accurate and reliable.

### Auditors

In contrast to the two main groups of accountants, auditors (both internal and external) are greatly affected by the introduction of B2B e-commerce. As mentioned earlier, there is less of a paper trail than under a traditional system. In fact, there may be nothing on paper until a goods delivery note is prepared in order to ship the goods. Thus, they have an increased need to focus on the technology involved in each transaction. As a result, they need to focus on assurance. In particular, online assurance, i.e. whether the B2B system is working correctly and whether all the transaction details being recorded are accurate, reliable and complete.

This represents a major change in the nature of the audit, even where previously an organisation's accounting system was computerised. Often in that case, auditors audited around the computer – that is, they checked that what came out was what they would have expected. In a B2B organisation, they need to audit through the computer – that is, they need to be assured that the computer is doing the correct things and that there are appropriate controls in place to ensure that errors are not made. This is particularly needed in the seller organisation because there is typically no human intervention in the transaction. In this case, the assurance should, preferably, be in real time. That is, the check on the controls on transactions should be done as transactions are being processed.

## 49.4 Business-to-consumer

This is the side of e-commerce that is most different from the traditional business environment. The seller is represented by a computer program which responds as appropriate to enquiries made by a consumer who can not only place an order but who will also provide a shipping address and make payment, all at the same time.

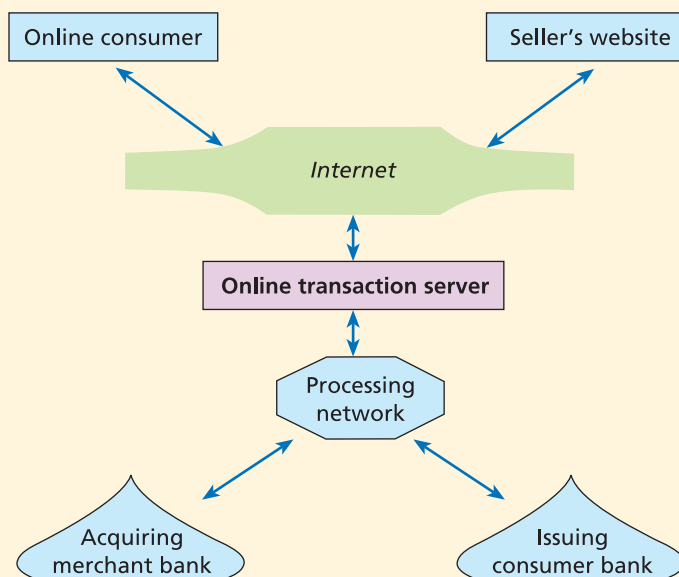
The consumer accesses the Internet and navigates to the seller's website. At the website, the consumer checks the seller's catalogue for the item(s) required, often through a series of searches of the seller's inventory database. This in itself may be very different from a traditional high street purchase, for the seller may actually have little or no physical stock. Instead, the seller has built an inventory database of the items that can be shipped to a customer in a reasonable period of time. (You can see examples of this at sites such as [www.amazon.co.uk](http://www.amazon.co.uk).)

When the decision is made to purchase something, the customer is directed to the seller's *online transaction server*, where all the customer's information, including personal details, the item(s) required, and credit or debit card details are entered. This information, particularly the credit card information, is usually encrypted as it is received. The information is then passed to the bank that issued the credit or debit card and to the seller's merchant bank (i.e. the bank that operates the receipt of funds in this form for the seller). If both banks accept the transaction, the seller is informed it has been accepted and provided with an order number for reference and an indication of when the item(s) will be shipped.

This B2C e-commerce system is presented in Exhibit 49.1.

### Activity 49.2

Compared with businesses operating in a traditional trading environment, what advantages concerning receipt of payment can you see for a business operating in a B2C environment?

**Exhibit 49.1****49.5 Accountants and B2C e-commerce**

B2C e-commerce has an impact upon the routine work of financial and management accountants similar to B2B. However, there are major issues with which accountants must be involved when the business first moves into a B2C environment:

- 1 The size of the transaction database. Is it going to be capable of handling a significant increase in transactions? In fact, what is that level of transactions likely to be?
- 2 The interface between the B2C systems and the accounting system.
- 3 The internal controls – the accountants need to emphasise the need for effective internal controls – checks built into the system to ensure entries are correct and correctly authorised – at the design stage, when it is easiest to incorporate them into the B2C system.

These are particularly difficult issues to deal with when the business is new and has no existing customer base, especially the question of size.

Auditors have similar issues to deal with as under B2B but, often, far more transactions to deal with. As individuals rather than other businesses are normally involved on the consumer side, there is a need to ensure that effective controls are in place in the system concerning credit card fraud and data security, for the liability if the system is breached may be far greater than if a B2B system is breached.

There is a further dimension for accountants to be concerned with concerning B2C transactions – globalisation.

**49.6 Globalisation**

Over 60 per cent of all B2C consumers resident outside the USA use B2C to purchase goods they wish to buy from sellers in other countries; over 50% do so because the goods they want are not

available in their own country, and 30% do so because they have found goods cheaper to buy overseas.

For accountants, this adds problems concerning international tax and, for auditors especially, opens the possibility of international fraud.

## 49.7 E-commerce and accounting

E-commerce is changing and will continue to change the manner in which accountants carry out their role and, more importantly, it will change the nature of that role.

We already have a wide range of accounting software that eliminates the need to use traditional double entry to record transactions. Accountants have remained outside the system changes by continuing to do what they've always done and, instead, they have developed computer packages to check that the accounting software was working properly.

The accountants did not need to be retrained and, for many years, no attention was paid in the training of accountants to this shift in the environment of accounting. This was possible because business was still conducted in traditional ways. It was only the manner by which transactions were recorded that changed.

E-commerce changed this. An increasing proportion of transactions are now conducted electronically, both between businesses and between businesses and consumers. In many cases, there are no paper records and no written entries relating to these transactions. As a result, **accountants can no longer check a transaction against the original invoice or order document. Neither can they check that someone with appropriate authority has approved an order by signing an authorisation.**

Take away the paper, take away the written signature, and take away the double entry and what have you left for an accountant to do? Even more to the point, what can an auditor do to check the validity and accuracy of the accounting records?

A knowledge of double entry is still important. No financial accountant will be able to function effectively all the time without it. Accountants need to understand the entries in the accounting records and need to be able to tell if they are appropriate and correct. They also need to know how to produce financial statements and how to make appropriate adjustments to the accounting figures when doing so. Thus, there is still a need for the traditional techniques, skills and understanding that have been covered in both volumes of *Business Accounting*.

However, they now need to add further techniques, skills and understanding to their role. They need to shift towards real-time assurance – verifying that things are as they should be *in real time*. To do so, accountants need to become technologically competent. They need to know and understand the technological infrastructure of e-commerce in the same way as they have always needed to know the infrastructure of traditional business and the manner in which it is conducted and performed. They need to know how to recognise weaknesses and loopholes, and how to trap errors in an electronic business environment. They need to know how to distinguish between valid entries and those that are erroneous or falsified when the only evidence they have is electronic.

There are great changes coming in the role of the accountant. Some of the professional accounting bodies already have examinations which consider these issues, but those examinations are being sat by people who have already been working as accountants for a few years. Pre-work education always lags behind real life and it will be many years before it is normal to include these skills in accounting courses at schools, colleges and universities. Instead, they will be learnt later, on the job, by attending training courses, or while studying for the examinations of the professional accountancy bodies.

As a student of accounting, you will be wise to become aware of this changing environment and to understand how it differs from the world as presented in the classroom and in your textbooks. Don't let it take you by surprise. Look at the Internet, learn how business is conducted upon it and consider how different it is from doing business face-to-face.



## Learning outcomes

You should now have learnt:

- 1 What is meant by 'e-commerce'.
- 2 What is meant by 'business-to-business' transactions.
- 3 What is meant by 'business-to-consumer' transactions.
- 4 What occurs in a typical business-to-consumer transaction.
- 5 About some of the benefits of e-commerce to sellers and buyers.
- 6 About the impact of e-commerce upon the role of the financial accountant, management accountant, internal auditor, and external auditor.
- 7 Why retail businesses cannot afford to stay out of e-commerce.

## Answers to activities

- 49.1** Contacting the customer or supplier and asking for confirmation; checking inventory to confirm that it had existed; checking the existence of fixed assets; etc.
- 49.2** No sales take place without prior payment which is guaranteed by the issuing consumer bank. There will, therefore, be no bad debts. Also, there is far greater control over cash flows as payment will always be received on time.

## Review questions

- 49.1** What is e-commerce?
- 49.2** What happens in a typical business-to-consumer transaction?
- 49.3** What impact is e-commerce having upon the role of the accountant?
- 49.4** Why can retail businesses not afford to ignore e-commerce?

You can find a range of additional self-test questions, as well as material to help you with your studies, on the website that accompanies this book at [www.pearsoned.co.uk/wood](http://www.pearsoned.co.uk/wood)

# Interest tables

**Table 1 Compound sum of £1**

Year	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.010	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100
2	1.020	1.040	1.061	1.082	1.103	1.124	1.145	1.166	1.188	1.210
3	1.030	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331
4	1.041	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464
5	1.051	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611
6	1.062	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772
7	1.072	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949
8	1.083	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358
10	1.105	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594
11	1.116	1.243	1.384	1.539	1.710	1.898	2.105	2.332	2.580	2.853
12	1.127	1.268	1.426	1.601	1.796	2.012	2.252	2.518	2.813	3.138
13	1.138	1.294	1.469	1.665	1.886	2.133	2.410	2.720	3.066	3.452
14	1.149	1.319	1.513	1.732	1.980	2.261	2.579	2.937	3.342	3.797
15	1.161	1.346	1.558	1.801	2.079	2.397	2.759	3.172	3.642	4.177

Year	12%	14%	15%	16%	18%	20%	24%	28%	32%
1	1.120	1.140	1.150	1.160	1.180	1.200	1.240	1.280	1.320
2	1.254	1.300	1.323	1.346	1.392	1.440	1.538	1.638	1.742
3	1.405	1.482	1.521	1.561	1.643	1.728	1.907	2.097	2.300
4	1.574	1.689	1.749	1.811	1.939	2.074	2.364	2.684	3.036
5	1.762	1.925	2.011	2.100	2.288	2.488	2.932	3.436	4.007
6	1.974	2.195	2.313	2.436	2.700	2.986	3.635	4.398	5.290
7	2.211	2.502	2.660	2.826	3.185	3.583	4.508	5.629	6.983
8	2.476	2.853	3.059	3.278	3.759	4.300	5.590	7.206	9.217
9	2.773	3.252	3.518	3.803	4.435	5.160	6.931	9.223	12.166
10	3.106	3.707	4.046	4.411	5.234	6.192	8.594	11.806	16.060
11	3.479	4.226	4.652	5.117	6.176	7.430	10.657	15.112	21.199
12	3.896	4.818	5.350	5.936	7.288	8.916	13.215	19.343	27.983
13	4.363	5.492	6.153	6.886	8.599	10.699	16.386	24.759	36.937
14	4.887	6.261	7.076	7.988	10.147	12.839	20.319	31.691	48.757
15	5.474	7.138	8.137	9.266	11.974	15.407	25.196	40.565	64.359

Year	36%	40%	50%	60%	70%	80%	90%
1	1.360	1.400	1.500	1.600	1.700	1.800	1.900
2	1.850	1.960	2.250	2.560	2.890	3.240	3.610
3	2.515	2.744	3.375	4.096	4.913	5.832	6.859
4	3.421	3.842	5.062	6.544	8.352	10.498	13.032
5	4.653	5.378	7.594	10.486	14.199	18.896	24.761
6	6.328	7.530	11.391	16.777	24.138	34.012	47.046
7	8.605	10.541	17.086	26.844	41.034	61.222	89.387
8	11.703	14.758	25.629	42.950	69.758	110.200	169.836
9	15.917	20.661	38.443	68.720	118.588	198.359	322.688
10	21.647	28.925	57.665	109.951	201.599	357.047	613.107
11	29.439	40.496	86.498	175.922	342.719	642.684	1164.902
12	40.037	56.694	129.746	281.475	582.622	1156.831	2213.314
13	54.451	79.372	194.619	450.360	990.457	2082.295	4205.297
14	74.053	111.120	291.929	720.576	1683.777	3748.131	7990.065
15	100.712	155.568	437.894	1152.921	2862.421	6746.636	15181.122

**Table 2 Present value of £1**

Year	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%
1	0.990	0.980	0.971	0.961	0.952	0.943	0.935	0.926	0.917	0.909	0.893	0.877	0.870
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.797	0.769	0.756
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.712	0.675	0.658
4	0.961	0.924	0.889	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.636	0.592	0.572
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.567	0.519	0.497
6	0.942	0.888	0.838	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.507	0.456	0.432
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.452	0.400	0.376
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.404	0.351	0.327
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.361	0.308	0.284
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.322	0.270	0.247
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.287	0.237	0.215
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.257	0.208	0.187
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.229	0.182	0.163
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.205	0.160	0.141
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.183	0.140	0.123
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.163	0.123	0.107
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.146	0.108	0.093
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.130	0.095	0.081
19	0.828	0.686	0.570	0.475	0.396	0.331	0.276	0.232	0.194	0.164	0.116	0.083	0.070
20	0.820	0.673	0.554	0.456	0.377	0.319	0.258	0.215	0.178	0.149	0.104	0.073	0.061
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.059	0.038	0.030
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.033	0.020	0.015
Year	16%	18%	20%	24%	28%	32%	36%	40%	50%	60%	70%	80%	90%
1	0.862	0.847	0.833	0.806	0.781	0.758	0.735	0.714	0.667	0.625	0.588	0.556	0.526
2	0.743	0.718	0.694	0.650	0.610	0.574	0.541	0.510	0.444	0.391	0.346	0.309	0.277
3	0.641	0.609	0.579	0.524	0.477	0.435	0.398	0.364	0.296	0.244	0.204	0.171	0.146
4	0.552	0.516	0.482	0.423	0.373	0.329	0.292	0.260	0.198	0.153	0.120	0.095	0.077
5	0.476	0.437	0.402	0.341	0.291	0.250	0.215	0.186	0.132	0.095	0.070	0.053	0.040
6	0.410	0.370	0.335	0.275	0.227	0.189	0.158	0.133	0.088	0.060	0.041	0.029	0.021
7	0.354	0.314	0.279	0.222	0.178	0.143	0.116	0.095	0.059	0.037	0.024	0.016	0.011
8	0.305	0.266	0.233	0.179	0.139	0.108	0.085	0.068	0.039	0.023	0.014	0.009	0.006
9	0.263	0.226	0.194	0.144	0.108	0.082	0.063	0.048	0.026	0.015	0.008	0.005	0.003
10	0.227	0.191	0.162	0.116	0.085	0.062	0.046	0.035	0.017	0.009	0.005	0.003	0.002
11	0.195	0.162	0.135	0.094	0.066	0.047	0.034	0.025	0.012	0.006	0.003	0.002	0.001
12	0.168	0.137	0.112	0.076	0.052	0.036	0.025	0.018	0.008	0.004	0.002	0.001	0.001
13	0.145	0.116	0.093	0.061	0.040	0.027	0.018	0.013	0.005	0.002	0.001	0.001	0.000
14	0.125	0.099	0.078	0.049	0.032	0.021	0.014	0.009	0.003	0.001	0.001	0.000	0.000
15	0.108	0.084	0.065	0.040	0.025	0.016	0.010	0.006	0.002	0.001	0.000	0.000	0.000
16	0.093	0.071	0.054	0.032	0.019	0.012	0.007	0.005	0.002	0.001	0.000	0.000	
17	0.080	0.060	0.045	0.026	0.015	0.009	0.005	0.003	0.001	0.000	0.000	0.000	
18	0.069	0.051	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.000	0.000	0.000	
19	0.060	0.043	0.031	0.017	0.009	0.005	0.003	0.002	0.000	0.000			
20	0.051	0.037	0.026	0.014	0.007	0.004	0.002	0.001	0.000	0.000			
25	0.024	0.016	0.010	0.005	0.002	0.001	0.000	0.000					
30	0.012	0.007	0.004	0.002	0.001	0.000	0.000						

**Table 3** Sum of an annuity of £1 for  $n$  years

Year	1%	2%	3%	4%	5%	6%	7%	8%
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.010	2.020	2.030	2.040	2.050	2.060	2.070	2.080
3	3.030	3.060	3.091	3.122	3.152	3.184	3.215	3.246
4	4.060	4.122	4.184	4.246	4.310	4.375	4.440	4.506
5	5.101	5.204	5.309	5.416	5.526	5.637	5.751	5.867
6	6.152	6.308	6.468	6.633	6.802	6.975	7.153	7.336
7	7.214	7.434	7.662	7.898	8.142	8.394	8.654	8.923
8	8.286	8.583	8.892	9.214	9.549	9.897	10.260	10.637
9	9.369	9.755	10.159	10.583	11.027	11.491	11.978	12.488
10	10.462	10.950	11.464	12.006	12.578	13.181	13.816	14.487
11	11.567	12.169	12.808	13.486	14.207	14.972	15.784	16.645
12	12.683	13.412	14.192	15.026	15.917	16.870	17.888	18.977
13	13.809	14.680	15.618	16.627	17.713	18.882	20.141	21.495
14	14.947	15.974	17.086	18.292	19.599	21.051	22.550	24.215
15	16.097	17.293	18.599	20.024	21.579	23.276	25.129	27.152
16	17.258	18.639	20.157	21.825	23.657	25.673	27.888	30.324
17	18.430	20.012	21.762	23.698	25.840	28.213	30.840	33.750
18	19.615	21.412	23.414	25.645	28.132	30.906	33.999	37.450
19	20.811	22.841	25.117	27.671	30.539	33.760	37.379	41.446
20	22.019	24.297	26.870	29.778	33.066	36.786	40.995	45.762
25	28.243	32.030	36.459	41.646	47.727	54.865	63.249	73.106
30	34.785	40.568	47.575	56.085	66.439	79.058	94.461	113.283

Year	9%	10%	12%	14%	16%	18%	20%	24%
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.090	2.100	2.120	2.140	2.160	2.180	2.200	2.240
3	3.278	3.310	3.374	3.440	3.506	3.572	3.640	3.778
4	4.573	4.641	4.779	4.921	5.066	5.215	5.368	5.684
5	5.985	6.105	6.353	6.610	6.877	7.154	7.442	8.048
6	7.523	7.716	8.115	8.536	8.977	9.442	9.930	10.980
7	9.200	9.487	10.089	10.730	11.414	12.142	12.916	14.615
8	11.028	11.436	12.300	13.233	14.240	15.327	16.499	19.123
9	13.021	13.579	14.776	16.085	17.518	19.086	20.799	24.712
10	15.193	15.937	17.549	19.337	21.321	23.521	25.959	31.643
11	17.560	18.531	20.655	23.044	25.738	28.755	32.150	40.238
12	20.141	21.384	24.133	27.271	30.350	34.931	39.580	50.895
13	22.953	24.523	28.029	32.089	36.766	42.219	48.497	64.110
14	26.019	27.975	32.393	37.581	43.672	50.818	59.196	80.496
15	29.361	31.722	37.280	43.842	51.659	60.965	72.035	100.815

Year	28%	32%	36%	40%	50%	60%	70%	80%
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.280	2.320	2.360	2.400	2.500	2.600	2.700	2.800
3	3.918	4.062	4.210	4.360	4.750	5.160	5.590	6.040
4	6.016	6.326	6.725	7.104	8.125	9.256	10.503	11.872
5	8.700	9.398	10.146	10.846	13.188	15.810	18.855	22.370
6	12.136	13.406	14.799	16.324	20.781	26.295	33.054	41.265
7	16.534	18.696	21.126	23.853	32.172	43.073	57.191	75.278
8	22.163	25.678	29.732	34.395	49.258	69.916	98.225	136.500
9	29.369	34.895	41.435	49.153	74.887	112.866	167.983	246.699
10	38.592	47.062	57.352	69.814	113.330	181.585	286.570	445.058
11	50.399	63.122	78.998	98.739	170.995	291.536	488.170	802.105
12	65.510	84.320	108.437	139.235	257.493	467.458	830.888	1444.788
13	84.853	112.303	148.475	195.929	387.239	748.933	1413.510	2601.619
14	109.612	149.240	202.926	275.300	581.859	1199.293	2403.968	4683.914
15	141.303	197.997	276.979	386.420	873.788	1919.869	4087.745	8432.045

**Table 4** Present value of annuity of £1 per period

Year	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.244	5.076	4.917	4.766	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.985	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	8.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.060	7.606
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.312	7.824
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.128	8.514
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077
30	25.808	22.397	19.600	17.292	15.373	13.765	12.409	11.258	10.274	9.427

Year	12%	14%	16%	18%	20%	24%	28%	32%	36%
1	0.893	0.877	0.862	0.847	0.833	0.806	0.781	0.758	0.735
2	1.690	1.647	1.605	1.566	1.528	1.457	1.392	1.332	1.276
3	2.402	2.322	2.246	2.174	2.106	1.981	1.868	1.766	1.674
4	3.037	2.914	2.798	2.690	2.589	2.404	2.241	2.096	1.966
5	3.605	3.433	3.274	3.127	2.991	2.745	2.532	2.345	2.181
6	4.111	3.889	3.685	3.498	3.326	3.020	2.759	2.534	2.339
7	4.564	4.288	4.089	3.812	3.605	3.242	2.937	2.678	2.455
8	4.968	4.639	4.344	4.078	3.837	3.421	3.076	2.786	2.540
9	5.328	4.946	4.607	4.303	4.031	3.566	3.184	2.868	2.603
10	5.650	5.216	4.833	4.494	4.193	3.682	3.269	2.930	2.650
11	5.988	5.453	5.029	4.656	4.327	3.776	3.335	2.978	2.683
12	6.194	5.660	5.197	4.793	4.439	3.851	3.387	3.013	2.708
13	6.424	5.842	5.342	4.910	4.533	3.912	3.427	3.040	2.727
14	6.628	6.002	5.468	5.008	4.611	3.962	3.459	3.061	2.740
15	6.811	6.142	5.575	5.092	4.675	4.001	3.483	3.076	2.750
16	6.974	6.265	5.669	5.162	4.730	4.033	3.503	3.088	2.758
17	7.120	5.373	5.749	4.222	4.775	4.059	3.518	3.097	2.763
18	7.250	6.467	5.818	5.273	4.812	4.080	3.529	3.104	2.767
19	7.366	6.550	5.877	5.316	4.844	4.097	3.539	3.109	2.770
20	7.469	6.623	5.929	5.353	4.870	4.110	3.546	3.113	2.772
25	7.843	6.873	6.907	5.467	4.948	4.147	3.564	3.122	2.776
30	8.055	7.003	6.177	5.517	4.979	4.160	3.569	3.124	2.778

# Answers to review questions

**Note:** All the answers are the work of the authors. None has been supplied by an examining body. The examining bodies accept no responsibility whatsoever for the accuracy or method of working in the answers given.

**Note:** In order to save space, £ signs have been omitted from columns of figures, except where the figures refer to £000, or where the denomination needs to be specified. For the same reason, names of the organisations and dates are sometimes omitted, but only where they add little to an understanding of the answer.

## 1.1

(a) (dates omitted)

	<i>Branch Current Account</i>	
Balance b/d	60,480	Cash
Goods sent	69,480	Goods returned
Expenses paid	11,000	
Net profit	42,000	Balance c/d
	<u>182,960</u>	

(b) Proof:

Branch assets

Less Branch liabilities

= Balance of branch current account

Indicates: Amount of money invested in branch

## 1.2

Balance b/d

Goods from head office

Gross profit

	<i>Memo</i>	<i>Branch Stock (dates omitted)</i>	<i>Memo</i>
Balance b/d	26,400	17,600	Branch debtors
Goods from head office	148,800	99,200	Cash sales
Gross profit	47,800	47,800	Returns to HO
			Goods stolen
			Profit and loss:
			Normal wastage
			Profit and loss:
			Abnormal wastage
			Balance c/d
	<u>175,200</u>	<u>164,600</u>	

*Branch Debtors*

Balances b/d	23,676	Bad debts	888
Branch stock: Sales	126,000	Discounts allowed	2,568
		Bank	134,400
		Balance c/d	<u>11,820</u>
			<u>149,676</u>

## 1.3

(a)(i)

	<i>Branch Stock (Selling Prices)</i>	
Goods from head office	Cash sales	89,940
(82,400 + 10% 8,240 =	Sales: Branch debtors	1,870
90,640 + 25%)	Goods to other branches	3,300
	Branch stock adjustment:	
	Reductions	2,250
	Balance c/d	<u>15,940</u>
		<u>113,300</u>

(ii)

	<i>Branch Stock Adjustment</i>	<i>*(profit margin)</i>
Goods to other branches	660	Branch stock
Branch stock: Reductions	2,250	(113,300 – 90,640)
Profit and loss	16,562	
Balance c/d	<u>3,188</u>	
	<u>22,660</u>	

\* As cost to branch (original cost + 10%) is subject to further mark-up of 25%, therefore margin is 20%, and this is profit margin used in this account.

(b) Book stock per branch stock account

Physical stock	15,940
	<u>14,850</u>
	<u>1,090</u>

Four possible reasons for deficiency:

- (i) thefts by customers;
- (ii) thefts by staff;
- (iii) wastages due to breakages, miscounting, etc.;
- (iv) cash misappropriated.

(c) Figure to be taken for RST balance sheet:

Actual stock at selling price	14,850
Less 20% margin	<u>2,970</u>
Cost to branch	11,880
Less head office loading	
(+10% = 1/11th of adjusted figure) 1/11th	<u>1,080</u>
Actual cost to company	<u>10,800</u>

Therefore (iii) 10,800 is correct answer.

## 1.7

Trading and Profit and Loss Account for the year ended 31 October 20X1

	Head Office	Branch
	£39,000	£26,000
Sales		
Less Cost of goods sold		
Opening stock	13,000	4,400
Add Purchases	37,000	
	50,000	
Goods to branch	17,200	17,200
	32,800	21,600
Less Closing stock	15,240	6,570
	17,560	15,030
	21,440	10,970
Bad debt provision not required		20
		10,990
Salaries	4,500	3,200
Administrative expenses	1,440	960
Carriage	2,200	960
General expenses	3,200	1,800
Provision for bad debts	50	
Depreciation	150	110
Manager's commission		360
Net profit	11,540	7,390
	9,900	3,600
Packer: Commission		13,500
Interest on capital: Packer	900	
Stringer	840	
	240	
	1,080	
	1,980	
Balance of profits: Packer <sup>3</sup> / <sub>4</sub>	8,640	
Stringer <sup>1</sup> / <sub>4</sub>	2,880	
	11,520	13,500
Balance Sheet as at 31 December 20X4		
Fixed assets		
Furniture		2,600
Less Depreciation		1,110
		1,490
Current assets		
Stock		21,810
Debtors		
Less Provision for bad debts	10,000	9,170
	830	3,000
Cash and bank		33,980
Less Current liabilities		
Creditors	6,200	
Bank overdraft	1,350	
Manager's commission	120	7,670
Working capital		26,310
		27,800

# 1.9

## (a) Conversion of Branch Trial Balance to Pounds Sterling

	Fl.	Fl.	Rate	£	£
Freehold buildings	63,000		7	9,000	
Debtors and creditors	36,000	1,560	8	4,460	195
Sales		432,000	9		48,000
Head office		504,260	Actual		60,100
Branch cost of sales	360,000		Below*	40,400	
Depreciation: Machinery		56,700	7		8,100
Administration costs	18,000		9	2,000	
Stock 30.6.20X8	11,520		8	1,440	
Machinery at cost	126,000		7	18,000	
Remittances	272,000		Actual	29,990	
Balances at bank	79,200		8	9,900	
Selling and distribution	28,800		9	3,200	
Profit on exchange		—	—		1,995
	<u>994,520</u>	<u>994,520</u>		<u>118,390</u>	<u>118,390</u>

\* Cost of sales: Branch Fl. 360,000

Less Depreciation Fl. 12,600 ÷ 7 = £1,800

Fl. 347,400 ÷ 9 = £38,600

£40,400

## EG Company Ltd

### Trading and Profit and Loss Accounts for the year ended 30 June 20X8

	Head office	Branch
Sales		48,000
Less Cost of sales	58,400	38,600
Depreciation	<u>600</u>	<u>1,800</u>
	59,000	40,400
Goods to branch	35,000	
Gross profit	<u>24,000</u>	<u>7,600</u>
Administration costs	15,200	2,000
Selling and distribution	23,300	3,200
Provision for unrealised profit on branch stock		
Manager's commission	300	
	<u>38,800</u>	<u>114</u>
Net profit	<u>41,200</u>	<u>5,314</u>
		<u>2,286</u>

Add Balance from last year  
Balance carried forward to next year

43,486  
2,000  
45,486

## (b) Balance Sheet as at 30 June 20X8

<b>Fixed assets</b>		
Freehold buildings at cost		23,000
Machinery at cost	24,000	
Less Depreciation	<u>9,600</u>	<u>14,400</u>
		<u>37,400</u>
<b>Current assets</b>		
Stock	30,040	
Debtors	13,360	
Bank	14,500	
Cash in transit	<u>1,990</u>	<u>59,890</u>
<b>Less Current liabilities</b>		
Creditors*	9,809	
Working capital		<u>50,081</u>
		<u>87,481</u>
<b>Financed by:</b>		
Share capital: Authorised and issued		40,000
Reserves	1,995	
Difference on exchange	<u>45,486</u>	<u>47,481</u>
Profit and loss		<u>87,481</u>

\* Creditors HO 9,500 + Branch 195 + Manager 114 = 9,809.

## (c) (HO Books) Branch Account

	£	Fl	£	Fl
Balance b/d	25,136	189,260	Cash from debtors	36
Components	35,000	315,000	Remittances	28,000
Net profit	2,286	*24,000	Cash in transit	1,990
Difference on exchange	1,995	—	Balance c/d	34,391
	<u>64,417</u>	<u>528,260</u>		<u>64,417</u>
				<u>528,260</u>

\* This represents the profit per branch profit and loss account if it had been drawn up using florins.

## 1.10

### (a) Trial Balance as at 31 December 20X0

	Crowns	Crowns	Rate	£
Bank	66,000		4	16,500
Creditors		92,400	4	23,100
Debtors	158,400		4	39,600
Fixed assets	145,200		5	29,040
Head office		316,800	Actual	65,280
Profit and Loss		79,200	4.4	18,000
Stocks	118,800		4	29,700
Difference on exchange		<u>488,400</u>		<u>114,840</u>
				<u>8,460</u>
				<u>114,840</u>



(Books of head office) Highland Branch

Balance Sheet as at 31 December 20X0

Fixed assets	
Current assets	
Stocks	56,100
Debtors	58,080
Bank	27,060
	<u>141,240</u>

<i>Financed by:</i>	
Issued share capital	86,400
Reserves	
Profit and loss	70,800
Difference on exchange	8,460
	<u>79,260</u>

## Machinery

Dec 31	Bank	4,000	Dec 31	HP interest	7,334	7,334
Dec 31	Balance	7,334	Dec 31	Balance	440	440
		<u>12,642</u>			<u>7,774</u>	<u>7,774</u>
20X7			20X7			
Dec 31	Bank	4,000	Jan 1	Balance	c/d	
Dec 31	Balance	3,774	Dec 31	HP interest		
		<u>7,774</u>				

## Provision for Depreciation: Machinery

## 2.3

20X1	Granby Garages	11,250	20X1	Profit and loss	<u>11,250</u>
20X2	Granby Garages	<u>8,063</u>	20X2	Profit and loss	<u>8,063</u>
20X3	Granby Garages	<u>4,078</u>	20X3	Profit and loss	<u>4,078</u>

20X1	Bank	9,000	Motor lorries	54,000
	Bank	24,000	HP interest	11,250
	Balance c/d	<u>32,250</u>		<u>65,250</u>
		65,250		

20X2	Bank	24,000	20X2	Balance b/d	32,250
	Balance c/d	16,313		HP interest	8,063
		<u>40,313</u>			<u>40,313</u>
20X3	Bank	20,391	20X3	Balance b/d	16,313
		<u>20,391</u>		Interest	4,078
					<u>20,391</u>

Depreciation		Profit and loss		12,500	
20X1	Balance c/d	20X1		12,500	
20X2	Balance c/d	20X2	Balance b/d	12,500	
			Profit and loss	12,500	
				25,000	
20X3	Balance c/d	20X3	Balance b/d	25,000	
			Profit and loss	12,500	
				37,500	
20X4	Balance c/d	20X4	Balance b/d	37,500	
			Profit and loss	12,500	
				50,000	
Balance Sheet as at 31 December					
		20X1	20X2	20X3	20X4
Motor lorries cost		54,000	54,000	54,000	54,000
Less Depreciation to date		12,500	25,000	37,500	50,000
		41,500	29,000	16,500	4,000
Liabilities:					
HP debt outstanding		32,250	16,313		
Charge against profit:					
HP interest		11,250	8,063	4,078	
Depreciation		12,500	12,500	12,500	
NB: Calculation of interest					
20X1 25% × £45,000 =		£11,250			
20X2 25% × £32,250 =		£8,063			
20X3 25% × £16,313 =		£4,078			
(b)					
		Granby's books			
		Bulwell Aggregates			
20X1	HP sales	54,000	20X1	Bank – deposit	9,000
	HP interest	11,250		– instalment	24,000
				Balance c/d	32,250
					65,250
20X2	Balance b/d	32,250	20X2	Bank – instalment	24,000
	HP interest	8,063		Balance c/d	16,313
		40,313			40,313
20X3	Balance b/d	16,313	20X3	Bank – instalment	20,391
	HP interest	4,078			20,391
		20,391			20,391
		Bank			
20X1	Bulwell	9,000			
20X2	Bulwell	24,000			
20X3	Bulwell	24,000			
		20,391			



Balance Sheet as at 31 December 20X8

Fixed assets	10,000
<i>Current assets</i>	
Stock in warehouse	10,000
Hire purchase debtors	178,500
Less Provision for unrealised profit	<u>59,500</u>
	119,000
	<u>129,000</u>
<i>Less Current liabilities</i>	
Creditors	16,600
Bank overdraft	<u>19,600</u>
	36,200
<i>Financed by:</i>	
Capital	100,000
Cash introduced	<u>6,800</u>
Add Net profit	106,800
	<u>4,000</u>
Less Drawings	<u>102,800</u>

2.11

<i>Machine Hire Purchase</i>						
<i>(a)(i)</i>						
1.1.X8	Bank		2,000	1.1.X8	Machine	10,000
30.6.X8	Bank		3,056	1.1.X8	HP interest	7,280
31.12.X8	Bank		3,056			
31.12.X8	Balance c/d		<u>9,168</u>			<u><u>17,280</u></u>
			<u><u>17,280</u></u>			
30.6.X9	Bank		3,056	1.1.X9	Balance b/d	9,168
31.12.X9	Bank		3,056			
31.12.X9	Balance c/d		<u>3,056</u>			<u><u>9,168</u></u>
			<u><u>9,168</u></u>			
30.6.X0	Bank		3,056	1.1.X0	Balance b/d	3,056

(ii)						
1.1.X8	Machine HP	Machine Hire Purchase (see workings)	7,280	31.12.X8	Profit and loss	4,368
				31.12.X8	Balance c/d	<u>2,912</u>
						<u>7,280</u>
1.1.X9	Balance b/d		2,912	31.12.X9	Profit and loss	2,427
				31.12.X9	Balance c/d	<u>485</u>
						<u>2,912</u>
1.1.X0	Balance b/d		485	31.12.X0	Profit and loss	485

(b) (Extracts) Balance Sheets as at 31 December

	20X8	20X9	20X0
<i>Fixed assets</i>			
Machinery at cost	10,000	10,000	10,000
Less Depreciation to date	<u>1,800</u>	<u>3,600</u>	<u>5,400</u>
	8,200	6,400	4,600
<i>Creditors</i>			
Falling due within 1 year			
Hire purchase	3,685	2,571	
Falling due after 1 year			
Hire purchase	2,571		
(20X8 3,056 + 3,056 – 2,427)			
(20X9 3,056 – 485)			
<i>Workings:</i> Interest (sum of digits is 15)			
To 31.12.20X8 (5/15 × 7,280) 2,427 + (4/15 × 7,280) = 4,368			
To 31.12.20X9 (3/15 × 7,280) 1,456 + (2/15 × 7,280) 971 = 2,427			
To 31.12.20X0 1/15 × 7,280 = 485			
Depreciation (10,000 – 1,000) ÷ 5 = 1,800 p.a.			

4.1

	Bank			
Application	37,500	Balance c/d		200,150
Allotment (40,000 less excess applications 7,500)	32,500			
First call (199,000 × 0.30)	59,700			
Second call (199,000 × 0.35)	69,650			
F Bell (1,000 × 0.8)	<u>800</u>			<u>200,150</u>
	F Bell			
Ordinary share capital	1,000	Bank	800	
		Forfeited shares	<u>200</u>	
			<u>1,000</u>	
	Application and Allotment			
Ordinary share capital	70,000	Bank	37,500	
		Bank	<u>32,500</u>	
			<u>70,000</u>	
	Ordinary Share Capital			
Forfeited shares	1,000	Application and allotment	70,000	
		First call	60,000	
Balance c/d	200,000	Second call	70,000	
		F Bell	<u>1,000</u>	
			<u>201,000</u>	
	First Call			
Ordinary share capital	60,000	Bank	59,700	
		Forfeited shares	<u>300</u>	
			<u>60,000</u>	

## Second Call

First call	2,100	<i>Forfeited Shares</i>	
Second call	2,400	Ordinary share capital	8,000
C Lamb	1,200		
Transfer to share premium	<u>1,300</u>		
	<u><u>8,000</u></u>		<u><u>8,000</u></u>
		<i>C Lamb</i>	
Ordinary share capital	8,000	Bank	6,800
		Forfeited shares	<u>1,200</u>
			<u><u>8,000</u></u>

*Bank*

(a)	Cosy Fires Ltd <i>Application and allotment</i>	
	Cash: Return of unsuccessful applications $5,000 \times 0.60$	3,000
	Share capital: Due on application and allotment: $40,000 \times 0.70$	28,000
	Share premium: $40,000 \times 0.25$	10,000
		<u>41,000</u>
		<u>25</u>
	Balance b/d	25
		<u>25</u>
	Cash application for	
	65,000 $\times$ 0.60	39,000
	Cash: Balance due on allotment	
	(see workings)*	1,975
	Balance c/d: Due from allottee in respect of 500 shares:	
	$500 \times 0.35 =$	175
	Less o/paid on application	
	$250 \times 0.60 =$	<u>150</u>
		<u>25</u>
		<u>41,000</u>

## Balan

Forfeited shares: Amount called on shares forfeited: $500 \times 0.70$		Balance b/d	75,000
Balance c/d	350	Application and allotment	28,000
	115,000	Call	11,850
	<u>115,350</u>	Forfeited shares	<u>500</u>
			<u>115,350</u>
<i>Share Premium</i>			
Balance c/d	10,375	Application and allotment	10,000
		Forfeited shares	<u>375</u>

 $\overline{C/C'}$ 

Application and allotment		
Share capital	25	Share capital
	500	Cash: $500 \times 1.10$ per share
		350
		550

$$\frac{3/5}{900}$$

Share capital		
$39,500 \times 0.30$		
	<i>Call</i>	
	<u>900</u>	<u>900</u>
	<u>11,850</u>	<u>11,850</u>
Cash		

Forfeited shares	5,000	Balance b/d	500,000
		Application and allotment	250,000
Balance c/d	1,000,000	First and final call	250,000
	<u>1,005,000</u>	Forfeited shares	<u>5,000</u>
			<u>1,005,000</u>

(A1)	Bank	$D_T$	$C_T$
	(A2) Ordinary share applicants	5,000	5,000
	Cash received from applicants.		
(B1)	Ordinary share applicants	5,000	5,000
	(B2) Ordinary share capital		
	Ordinary shares allotted.		
(C1)	Preference share capital	5,000	5,000
	(C2) Preference share redemption		
	Shares to be redeemed.		
(D1)	Preference share redemption	5,000	5,000
	(D2) Bank		
	Payment made to redeem shares.		

## Balances

[illegible]

	Balances before	Effect	Balances after
Net assets (except bank)	20,000		20,000
Bank	13,000	(D2) 6,250	6,750
	<u>33,000</u>		<u>26,750</u>
Preference share capital	5,000	(A1) 5,000	
Preference share redemption	–	(D1) 6,250	–
		(A2) 5,000	–
		(B2) 1,250	
Ordinary share capital	15,000		15,000
Capital redemption reserve	–	(C2) 5,000	5,000
Share premium	2,000		2,000
	<u>22,000</u>		<u>22,000</u>
Profit and loss	11,000	(C1) 5,000	4,750
	<u>33,000</u>	(B1) 1,250	<u>26,750</u>
(e)			
(A1) Bank		Dr	Cr
(A2) Ordinary share applicants		7,000	7,000
Cash received from applicants.			
(B1) Ordinary share applicants			
(B2) Ordinary share capital		7,000	7,000
Ordinary shares allotted.			
(C1) Preference share capital			
(C2) Preference share redemption		5,000	5,000
Shares being redeemed.			
(D1) Share premium account			
(D2) Preference share redemption		1,500	1,500
Amount of share premium account used for redemption.			
(E1) Profit and loss appropriation			
(E2) Preference share redemption		500	500
Excess of premium payable over amount of share premium account usable for the purpose.			
(F1) Preference share redemption			
(F2) Bank		7,000	7,000
Amount payable on redemption.			

	Balances before	Effect	Balances after
Net assets (except bank)	20,000		20,000
Bank	13,000	(D2) 7,000	7,000
	<u>33,000</u>		<u>13,000</u>
Preference share capital	5,000	(C1) 5,000	–
Preference share redemption	–	(F1) 7,000	–
		(C2) 5,000	–
		(D2) 1,500	–
		(E2) 500	–
Ordinary share capital	15,000		22,000
Ordinary share applicants	–	(B1) 7,000	–
Share premium account	2,000	(D1) 1,500	500
	<u>22,000</u>		<u>22,500</u>
Profit and loss	11,000	(E1) 500	10,500
	<u>33,000</u>		<u>33,000</u>
5.3			
(a)			
(A1) Ordinary share capital		Dr	Cr
(A2) Ordinary share purchase		6,000	6,000
Shares to be purchased.			
(B1) Ordinary share purchase			
(B2) Bank		6,000	6,000
Payment for shares purchased.			
(C1) Profit and loss			
(C2) Capital redemption reserve		4,500	4,500
Transfer of deficiency of permissible capital payment to comply with Companies Act.			
Balances before	12,500		12,500
Net assets (except bank)	13,000	(B2) 6,000	7,000
Bank	<u>25,500</u>		<u>19,500</u>
Preference share capital	5,000		5,000
Ordinary share capital	10,000	(A1) 6,000	4,000
Ordinary share purchase	–	(B1) 6,000	–
Non-distributable reserves	6,000	(A2) 6,000	6,000
Capital redemption reserve	–	(B2) 4,500	4,500
	<u>21,000</u>		<u>19,500</u>
Profit and loss	4,500	(C1) 4,500	–
	<u>25,500</u>		<u>19,500</u>



**5.3 (cont'd)**

	Dr	Cr
(A1) Ordinary share capital (A2) Ordinary share purchase Shares to be purchased.	6,000	6,000
(B1a) Profit and loss (B2b) Non-distributable reserves (B2) Ordinary share capital	4,500 1,500	
Transfers of profit and loss and non-distributable reserves per Companies Act.		6,000
(C1) Ordinary share purchase (C2) Bank Payment to shareholders.	12,000	

	Balances before	Effect	Balances after
Net assets (except bank) Bank	12,500 13,000 <u>25,500</u>	Dr (C2) 12,000	12,500 1,000 <u>13,500</u>
Preference share capital Ordinary share capital Ordinary share purchase	5,000 10,000 –	(A1) 6,000 (C1) 12,000	5,000 4,000 –
Non-distributable reserves	<u>6,000</u> 21,000	(B1b) 1,500	<u>4,500</u> 13,500
Profit and loss	<u>4,500</u> <u>25,500</u>	(B1a) 4,500	<u>–</u> <u>13,500</u>

**5.5**

Workings: Opening balance 10% debentures (a/c below) Originally issued	375,000
Less Redeemed previously	<u>150,000</u>
30/9 Debenture redemption	<u>225,000</u>
Workings: Sinking fund investments (a/c below)	
Appropriations to date	334,485
Interest invested (39,480 – 2,475)	<u>37,005</u>
Less Sold – at cost	<u>371,490</u> <u>144,915</u> <u>226,575</u>

**Appendix 2**

1/7 Balance b/d	226,575	2/8 Bank No. 2 Sale	73,215
2/8 Sinking fund: Profit (73,215 – 69,322)		25/9 Bank No. 2 Sale	160,238
25/9 Sinking fund: Profit (Cost 226,575 – 69,322 = 157,253. Sold for 160,238)	3,893		
	<u>2,985</u> <u>233,453</u>		<u>233,453</u>
Workings: Sinking fund (a/c below)			
Previous contributions			334,485
Interest on investments			39,480
Profit: Previous sales of investments (147,243 – 144,915)			2,328
Profit: Previous purchase debentures (150,000 – 147,243)			<u>2,757</u>
			<u>379,050</u>
Less Transfer to general reserve sum equal to debentures redeemed			<u>150,000</u> <u>229,050</u>
30/9 Debentures redemption (Premium 1%)	2,250	1/7 Balance b/d	229,050
30/9 General reserve	236,889	7/7 No 2 Bank: Interest	1,756
		2/8 SF Investments: Profit	3,893
		13/9 No 2 Bank: Interest	1,455
	<u>239,139</u>	25/9 SF Investments: Profit	<u>2,985</u> <u>239,139</u>
1/7 Balance b/d	2,475	No. 2 Bank A/c	15,150
7/7 Sinking fund: Interest	1,756	30/9 W Bank plc (deposit)	212,100
2/8 SF investments: Sale	73,215	30/9 Debentures redemption	
13/9 Sinking fund: Interest	1,455	30/9 No. 1 Bank transfer of balance	11,889
25/9 SF investments: Sale	<u>160,238</u> <u>239,139</u>		<u>239,139</u>
30/9 No. 2 Bank (225,000 Debentures – 15,000 B Ltd = 210,000 at 1% premium)	212,100	Debtore Redemption A/c	
30/9 Balance c/d (15,000 outstanding at premium 1%)	<u>15,150</u> <u>227,250</u>	30/9 10% Debentures	225,000
		30/9 Sinking fund (premium)	<u>2,250</u>
30/9 No. 2 Bank	15,150	W Bank plc	15,150

**5.7**

(Dates omitted – all figures shown in £000)

<i>Application and Allotment</i>	
Ordinary shares	60
Share premium	<u>40</u>
	<u>100</u>
<i>Call Account</i>	
Ordinary shares	18
	<u>2</u>
	<u>20</u>
<i>Investments (own shares)</i>	
Call	11
Share premium	<u>11</u>

**5.9**

(Note: Some abbreviations are used)

<i>10% Debentures</i>	
31.12.X8	100,000
31.3.X9	<u>100,000</u>
<i>Debt Redemption Fund</i>	
31.12.X8	20,000
31.12.X8	<u>20,000</u>
31.3.X9	<u>25,900</u>
<i>Debt Redemption Fund Investment</i>	
31.12.X8	11,400
31.12.X8	<u>11,400</u>
31.3.X9	<u>13,900</u>
31.3.X9	<u>25,300</u>

**6.1**

(a)

<i>Profit and Loss Account for the year ended 31 May 20X5</i>	
Gross profit	56,000
Less	
Salaries of vendors	3,390
Wages	17,280
Rent	1,720
Distribution	3,360
Commission	1,400
Bad debts	628
Interest	3,300
Directors' remuneration	8,000
Directors' expenses	1,030
Depreciation	
Vans*	3,800
Machinery	1,150
Bank interest	336
Net profit	<u>45,394</u>
	<u>10,606</u>
	<u>56,000</u>

**Chess Ltd**

*Profit and Loss Account for the year ended 31 May 20X5*

<i>Profit and Loss Account for the year ended 31 May 20X5</i>	
Gross profit	56,000
Less	
Salaries of vendors	3,390
Wages	17,280
Rent	1,720
Distribution	3,360
Commission	1,400
Bad debts	628
Interest	3,300
Directors' remuneration	8,000
Directors' expenses	1,030
Depreciation	
Vans*	3,800
Machinery	1,150
Bank interest	336
Net profit	<u>45,394</u>
	<u>10,606</u>
	<u>56,000</u>

\*Depreciation on vans:

Vans to 31 March 20X5 20% × 3 months × 14,000 + 20% × 1 month × 6,000 = 800

After 20% × 9 months × 14,000 + 20% × 9 months × 6,000 = 3,000

(b) Transfer to capital reserve.

(c) Charge to a goodwill account.

## Adjusted Profits

If 86,357 is a return of 20% on investment, then

20

**6.3 (a)**

CK Ltd (not asked for in question)

CK Ltd (not asked for in question)

(b) (Narratives omitted)

(b) (Narratives omitted)	
Cash	5,000
Share premium	3,000
Ordinary shares	2,000
Cash	
Discount on issue	7,840
7 per cent debentures	160
Goodwill	7,000
Freehold premises	10,000
Plant	3,500
Stock	2,000
Debtors	5,000
Provision for discounts receivable	150
Creditors	3,200
Provision for bad debts	300
Ordinary shares	24,150
Goodwill	500
Freehold premises	5,500
Plant	2,000
Stock	1,600
Debtors	3,400
Creditors	1,500
Bank overdraft	3,500
Cash	5,000
Ordinary share capital	3,000
Formation expenses	1,200
Cash	1,200

(c) **CJK Ltd**  
*Balance Sheet as at 1 January 20X0*

<i>Fixed assets: at cost</i>	
Freehold premises	15,500
Plant	5,500
Goodwill	7,500
	<u>28,500</u>
<i>Current assets</i>	
Stock	
Debtors	3,600
Less Provision for bad debts	<u>8,400</u>
Cash at bank	300
	<u>3,140</u>
	<u>14,840</u>
<i>Less Current liabilities</i>	
Creditors	4,700
Less Provision	<u>150</u>
Working capital	<u>4,550</u>
	<u>10,290</u>
	<u><u>38,790</u></u>

**7.1**

<i>Debtenture Interest</i>	
20X6	
Dec 31	14,000
Dec 31	3,500
	<u>17,500</u>
<i>Income Tax</i>	
20X6	
Dec 31	3,500
Dec 31	Debtenture interest
	<u>3,500</u>
<i>Ordinary Dividends</i>	
20X6	
Jul 1	32,000
Dec 31	48,000
	<u>80,000</u>
<i>Deferred Taxation</i>	
20X6	
Dec 31	16,000
	<u>16,000</u>
*40% of (£110,000 – £70,000) = £16,000	
<i>Corporation Tax</i>	
20X6	
Dec 31	145,000
	<u>145,000</u>
Dec 31	Profit and loss
	<u>145,000</u>

(b) *Profit and Loss Account (extracts) year to 31 December 20X6*

Net trading profit	390,000
Less Debtenture interest	<u>17,500</u>
Profit on ordinary activities before taxation	372,500
Less Corporation tax	
Deferred tax	145,000
	<u>16,000</u>
Profit on ordinary activities after taxation	161,000
Less Ordinary dividends: Interim	<u>211,500</u>
Final proposed	32,000
	<u>48,000</u>
	<u>80,000</u>
	<u>131,500</u>

*Balance Sheet (extracts) as at 31 December 20X6*

<i>Creditors: Amounts falling due within one year</i>	
Proposed ordinary dividend	48,000
Corporation tax	145,000
Deferred tax	16,000
Income tax	3,500

**7.3**

*Workings:*

- (W1) Tax deducted from fixed interest income is  $\frac{1}{4} \times £60,000 = £15,000$   
(W2) Changes in deferred taxation account.  
Timing difference:  
Capital allowances allowable for tax (D)  
Depreciation actually charged (D)

260,000
<u>180,000</u>
<u>80,000</u>

Transferred to deferred tax account £80,000 × 40% = £32,000

20X8	Dec 31	Balance c/d	202,000	Jan 1	Balance b/d	(J)	170,000
				Dec 31	Tax on profit on ordinary activities (W2)		32,000
			<u>202,000</u>				<u>202,000</u>
<i>Income Tax</i>							
20X8	Nov 9	Interest received	(C1)	15,000	Dec 5	Debtenture interest	40,000
		Bank		25,000			<u>40,000</u>
				<u>40,000</u>			
<i>Interest Received</i>							
20X8	Dec 31	Profit and loss		75,000	Nov 9	Bank	60,000
				<u>75,000</u>	Nov 9	Income tax (C1)	<u>15,000</u>
							<u>75,000</u>

7.3 (cont'd)				Skim Ltd			
20X8		Debtenture Interest 20X8		Profit and Loss (extracts) for the year ended 31 December 20X8			
Dec 5	Bank	(B)	160,000	Dec 31	Profit and loss	200,000	
Dec 5	Income tax	(B)	40,000			<u>200,000</u>	
			<u>200,000</u>				
20X8		Investment Income					
Dec 31	Profit and loss			20X8	Oct 1	Bank	(C2)
							<u>2,000</u>
							<u>2,000</u>
20X8		Corporation Tax					
Sept 30	Bank*		272,000	Jan 1	Balance b/d	(K)	280,000
Sept 30	Tax on profit			Dec 31	Tax on profit		
	on ordinary				on ordinary		
	activities†	(K)	8,000		activities	(L)	340,000
Dec 31	Balance c/d	(L)	340,000				<u>620,000</u>
			<u>620,000</u>				
*£280,000 owing – £8,000 reduction (K) = £272,000.							
†Adjustment for amendment in tax bill.							
Tax on Profit on Ordinary Activities							
20X8		20X8					
Dec 31	Corporation			Oct 6	Corporation		
	tax				tax	(K)	8,000
Dec 31	Deferred			Dec 31	Profit and loss		
	tax	(W2)	32,000				<u>364,000</u>
			<u>372,000</u>				<u>372,000</u>
Preference Dividends							
20X8		20X8					
Jun 30	Bank	(F)	32,000	Dec 31	Profit and loss		
			<u>32,000</u>				<u>32,000</u>
Ordinary Dividends							
20X8		20X8					
Mar 10	Bank	(I)	240,000	Jan 1	Accrued b/d	(I)	240,000
Aug 8	Bank	(G)	180,000	Dec 31	Profit and loss		
Dec 31	Accrued c/d		300,000				<u>480,000</u>
			<u>720,000</u>				<u>720,000</u>

## Skim Ltd

Profit and Loss (extracts) for the year ended 31 December 20X8

Net trading profit	(A)	1,200,000
Add Fixed rate interest (C1) (gross)	75,000	
Investment income (C2) (gross)	<u>2,000</u>	
		<u>77,000</u>
Less Debtenture interest (B) (gross)	1,277,000	
Profit on ordinary activities before taxation		<u>200,000</u>
Less Tax on profit on ordinary activities*		<u>1,077,000</u>
Profit on ordinary activities after taxation		<u>364,000</u>
Less Dividends:		<u>713,000</u>
Preference dividend	32,000	
Ordinary: Interim	180,000	
Final	<u>300,000</u>	
		<u>512,000</u>

\*Notes attached to the financial statements giving make-up of this figure.

## Balance Sheet (extracts) as at 31 December 20X8

Creditors: amounts falling due within one year	
Proposed ordinary dividend	300,000
Corporation tax	340,000
Deferred tax	<u>202,000</u>

A final point concerns the difference in treatment of tax on investment income as compared with tax on other income, such as interest. It is only the tax on investment income which is treated as part of the final tax costs, while the tax on interest is simply deducted from charges paid by the company. You would have to study taxation in detail to understand why this happens.

## 7.5 Sunset Ltd

Profit and Loss Account for the year ended 31 December 20X2

Trading profit	150,000
Income from shares in related companies	3,600*
Other interest receivable and similar income	<u>1,000**</u>
	<u>4,600</u>
Interest payable and similar charges	154,600
Profit on ordinary activities before taxation	<u>3,000</u>
Tax on profit on ordinary activities	<u>151,600</u>
Profit on ordinary activities after taxation	<u>54,000</u>
Undistributed profits from last year	<u>97,600</u>
	<u>22,480</u>
	<u>75,120</u>
Transfers to reserves	10,000
Dividends proposed	<u>20,000</u>
Undistributed profits carried to next year	<u>30,000</u>
	<u>45,120</u>

\*\*£30,000 × 12% = £3,600

\*\*£20,000 × 5% = £1,000

**7.6**

(All in £million)

<i>Ordinary Dividends</i>		
(i)		
31.8.X8	Bank (X7 final)	28
31.12.X8	Bank (X8 interim)	48
31.3.X9	Balance c/d	<u>76</u>
		<u>124</u>
<i>Deferred Taxation</i>		
(ii)		
31.3.X9	Balance c/d	3
		<u>8</u>
		<u>11</u>

**8.1**

(a)

Either Ltd

Profit per draft accounts

(i)	Stock: reduce to net realisable value	+		£000
(ii)	Directors' remuneration		35	157
(iii)	Bad debt		43	
(iv)	Corporation tax saved on (i) + (ii) + (iii) × 50%		30	
(v)	Depreciation adjustment (W1)	54		
(vi)	Revaluation reserve (realised on sale)	125		
(vii)	General reserve	80		
(viii)	Loss brought forward (W2)	<u>259</u>		
			144	
			<u>282</u>	
			net (23)	(23)
				<u>134</u>
	Maximum possible dividend		£9,000	
	Preference dividend 6%		£125,000	
	Ordinary dividend			

*Research and development expenditure*: assumed to have been carried forward in accordance with SSAP 13 and can be justified. Failing this it would have to be a realised loss.

(b) For a plc no changes required, except that the payment should not reduce net assets below called-up share capital and undistributable reserves = 400 + 150 + 100 = 650. A further bad debt might change this position.

(W1) <i>Reducing balance</i>				
Cost 1.12.20X1				100,000
Depreciation 20X2				<u>25,000</u>
				75,000
Cost 1.6.20X3				<u>25,000</u>
Depreciation 20X3				<u>100,000</u>
				25,000
Cost 29.2.20X4				75,000
31.5.20X4				<u>28,000</u>
				45,000
Depreciation 20X4				<u>148,000</u>
				37,000
Cost 1.12.20X4				<u>111,000</u>
Depreciation 20X5				<u>50,000</u>
				161,000
				<u>40,250</u>
				<u>120,750</u>
				<u>127,250</u>
Total 25,000 + 25,000 + 37,000 + 40,250 =				
<i>Straight line</i>				
Cost 1.12.20X2	100,000	20X2	20X3	20X4
1.6.20X3	25,000	25,000	25,000	25,000
29.2.20X4	28,000		3,125	6,250
31.5.20X4	45,000			5,250
1.12.20X4	50,000			<u>5,625</u>
		<u>25,000</u>	<u>28,125</u>	<u>42,125</u>
				<u>62,000</u>
			Total 157,250	

Extra depreciation 157,250 – 127,250 = 30,000

(W2) As profits after tax were £157,000 but were shown in the balance sheet as £13,000, this means that a deficit of £144,000 had been brought forward from last year.

**9.1**  
(a) **Merton Manufacturing Co Ltd**  
*Balance Sheet as at . . .*

<i>Fixed tangible assets</i>	
Freehold land and buildings at cost	95,000
Plant and equipment at written-down value (W1)	104,350
	<u>199,350</u>
<i>Current assets</i>	
Stocks	25,000
Debtors	50,000
Bank	14,150
	<u>89,150</u>
Creditors: amounts falling due within one year	63,500
Creditors	<u>63,500</u>
Net current assets	25,650
Total assets <i>less</i> current liabilities	<u>225,000</u>
Long-term loans: 8 per cent debentures (W3)	150,000
	<u>75,000</u>
Capital and reserves	
Called-up share capital	75,000
150,000 50p ordinary shares (W4)	<u>75,000</u>

*Workings:*

(W1)	<i>Capital Reduction</i>	
Ordinary shares 50p (new)	Ordinary shares £1 (old)	90,000
(1 for 6 = 15,000 × 50p)	6% preference shares (old)	150,000
Ordinary shares 50p (new)	11½% Debentures (old)	100,000
(1 for 3 – preference –	Share premium written off	25,000
50,000 × 50p)		
8% debentures	25,000	
(1 for 3 preference)	50,000	
8% debentures		
(exchange for 11½%)	100,000	
Ordinary shares 50p		
(1 for every £4		
old debenture)	12,500	
Goodwill written off	50,000	
Profit and loss written off	38,850	
Plant and equipment*	<u>81,150</u>	
	<u>365,000</u>	

\*Per (vii) of question – amount needed to balance.

(W2) Shares issued 60,000 shares × 50p = 30,000

Cash 30,000 – overdraft 15,850 = balance 14,150

(W3) See capital reduction – debit side (W1) new debentures 50,000 + 100,000 = 150,000

(W4) See (W1) 7,500 + 25,000 + 12,500 + new shares issued for cash 30,000 = 75,000

(b) (Main points)	<i>Old shareholdings</i>	<i>New shareholdings</i>
Expected profit	22,500	22,500
<i>Less</i> Interest 11½% 8%	11,500	
Taxable profits	<u>11,000</u>	12,000
<i>Less</i> Corporation tax 33⅓%	3,667	10,500
Profits before dividends	<u>7,333</u>	3,500
Preference dividends – if profits sufficient	<u>9,000</u>	<u>7,000</u>
		<u>–</u>

*Before reconstruction*

(Old) Preference shareholders

Before reconstruction it would have taken over 5 years at this rate before preference dividends payable, as probably deficit of 38,850 on the profit and loss account would have to be cleared off first.

(Old) Ordinary shares

Even forgetting the profit and loss account deficit, the preference dividends were bigger than available profits. This would leave nothing for the ordinary shareholder.

*After reconstruction*

The EPS is £7,000 ÷ 150,000 = 4.67p

If all profits are distributed the following benefits will be gained:

By old preference shareholders	2,335
50,000 shares × 4.67p	4,000
£50,000 8% debentures	<u>6,335</u>

Plus any benefits from tax credits.

By old ordinary shareholders

15,000 shares × 4.67p

700

Plus any benefits from tax credits.

(c) Preference shareholders – points to be considered:

(i) What were prospects for income?

Based on projected earnings would have been no income for over 5 years, then earnings of 7,333 per annum if all profits distributed.

(ii) What are new prospects for income?

Total income of 6,333 per annum immediately.

(iii) Is it worth exchanging (i) for (ii)?

Obviously depends on whether forecasts are accurate or not. If the above are accurate would seem worthwhile.

(iv) What have preference shareholders given up?

Some of exchange consists of ordinary shares which are more risky than preference shares, both in terms of dividends and of payments on liquidation.

(v) What have they gained?

Debt interest payable whether profits made or not.

## 9.2

### (a) (Narratives omitted)

Preference share capital	Dr	Cr
Ordinary share capital	37,500	
Capital reduction	175,000	
Preference shares reduced 25p each ( $0.25 \times 150,000$ ) and Ordinary shares reduced by 0.875 ( $200,000 \times 0.875$ ).		212,500
Capital reduction		
Ordinary share capital	3,375	
Ordinary shares issued re. preference dividend arrears, $27,000 \times 0.125$ .		3,375
Share premium		
Capital reduction	40,000	
Share premium balance utilised.		40,000
Provision for depreciation		
Capital reduction	62,500	
Plant and machinery	72,500	
Plant and machinery written down to 75,000.		135,000
Capital reduction		
Profit and loss	176,625	
Preliminary expenses		114,375
Goodwill		7,250
Profit and loss account and intangible assets written off.		55,000
Cash		
Ordinary share applicants	62,500	
Applications for shares $500,000 \times 0.125$ .		62,500
Ordinary share applicants		
Ordinary share capital	62,500	
500,000 ordinary shares issued.		62,500

### (b) Balance Sheet as at 31 December 20X5

<i>Fixed assets</i>		
Leasehold property at cost	80,000	
Less Provision for depreciation	30,000	50,000
Plant and machinery at valuation		75,000
		<u>125,000</u>
<i>Current assets</i>		
Stock	79,175	
Debtors	31,200	
Bank	11,500	
	<u>121,875</u>	
<i>Less Current liabilities</i>		
Creditors	43,500	
Working capital		<u>78,375</u>
		<u><u>203,375</u></u>
<i>Financed by:</i>		
Share capital:		
Preference shares		112,500
150,000 shares £0.75		
Ordinary shares		90,875
727,000 ordinary shares £0.125		<u><u>203,375</u></u>
	Dr	Cr
<b>9.3 The Journal (narratives omitted)</b>		
(a) Preference share capital	20,000	
Capital reduction		20,000
(b) Ordinary share capital	437,500	
Capital reduction		437,500
(c) Capital reserve	60,000	
Capital reduction		60,000
(d) Preference share capital	80,000	
Ordinary share capital	437,500	
New ordinary share capital		517,500
(e) (i) Debenture holders	300,000	
Debentures		300,000
(ii) Bank	300,000	
Debenture holders		300,000
(f) Capital reduction	517,500	
Goodwill etc.		250,000
Plant and machinery		24,000
Furniture		4,400
Profit and loss		<u>239,100</u>



### 9.3 (cont'd) Quality Yarns Ltd Balance Sheet as at 31 March 20X2

<b>Fixed assets</b>		
Intangible: Goodwill and trademarks		30,000
Tangible: Plant and machinery		296,000
Furniture and fittings		4,000
		<u>330,000</u>
<b>Current assets</b>		
Stock	190,200	
Debtors	74,600	
Bank	255,600	
Cash	300	
	<u>520,700</u>	
<b>Creditors: amounts falling due within 1 year</b>		
Creditors	33,200	
Net current assets		<u>487,500</u>
Total assets less current liabilities		<u>817,500</u>
<b>Creditors: amounts falling due after more than 1 year</b>		
Debentures		<u>300,000</u>
		<u>517,500</u>
<b>Capital and reserves</b>		
Called-up share capital		<u>517,500</u>

### 10.1

- (a) Following is a brief answer:
- Such closure costs should be treated as an exceptional item, because:
    - it is (probably) a material item;
    - these are costs not likely to recur regularly or frequently.
  - This should be adjusted in tax charge for 20X7. Because it is not material (probably) it does not need to be disclosed separately.
  - The excess should be credited to a reserve account, and a note attached to the balance sheet. Depreciation to be based on revalued amount and on new estimate of remaining life of the asset, to be disclosed in a note to the accounts.
  - Treat as bad debt and write off to profit and loss. Because it is a material item it should be disclosed as an exceptional item in the profit and loss account.
  - This is a prior period adjustment. The retained profit brought forward should be amended to allow for the change in accounting policy in the current year. The reasons: (1) it is material, (2) relates to a previous year, (3) as a result of change in accounting policy. The adjustment should be disclosed in a note to the financial statements.
- (b) See Sections 10.25 and 10.39.

### 10.2

- The replacement cost is irrelevant. The stock should be shown at the cost of £26,500. This assumes historic cost accounts.
- Paramite*: Stock to be valued at direct costs £72,600 plus fixed factory overhead £15,300 = £87,900. Under no circumstances should selling expenses be included.
- Paraton*: As net realisable value is lower than the costs involved, this figure of £9,520 should be used (SSAP 9).  
In this case there is a change of accounting policy. Accordingly a prior period adjustment will be made. On a straight line basis, net book value would have been:  

Cost	160,000 less $12\frac{1}{2}\% \times 2$ years =	120,000
Value shown		<u>90,000</u>
Therefore prior period adjustment of		30,000
to be added to retained profit at 1 November 20X4.		

 For 20X5 and each of the following 5 years depreciation will be charged at the rate of £20,000 per annum (FRS 3).  
 The cost subject to depreciation is £250,000 less land £50,000 = £200,000. With a life of 40 years this is £5,000 per annum.  
 This also will result in a prior period adjustment, in this case  $10 \times £5,000 = £50,000$ . This will be debited to retained profits at 1 November 20X4. For 20X5 and each of the following 29 years the yearly charge of depreciation will be £5,000 (FRS 3).
- Write off £17,500 to profit and loss (SSAP 13).
- As this development expenditure is almost definitely going to be recovered over the next 4 years it can be written off over that period (SSAP 13).
- As this is unlikely to happen often it is an exceptional item. Charge to profit and loss on ordinary activities under the appropriate statutory heading (FRS 3).
- As this is over 20 per cent, it is material and appears to be long-term. This means that Lilleshall Ltd is an associated company and accounts should be prepared accordingly. The post-acquisition profits to be brought in are  $30\% \times £40,000 = £12,000$ .

### 10.5

- The fact that this is a partnership does not mean that accounting standards are not applicable; they are just as applicable to a partnership as they are to a limited company.
- These should be included as sales £60,000 in the accounts for the year to 31 May 20X7. This is because the matching concept requires that revenue, and the costs used up in achieving it, should be matched up. Profits: increase of £60,000.
  - Stock values are normally based on the lower of cost or net realisable value. In this case it depends how certain it is that the stock can be sold for £40,000. If a firm order can definitely be anticipated, then the figure of £40,000 can be used as this then represents the lower figure of net realisable value. Profit: an increase of £15,000. However, should the sale not be expected, then the concept of prudence dictates that the scrap value of £1,000 be used. Profit: a reduction of £24,000.

(b) It is important to establish the probability of the payment of the debt of £80,000. If it is as certain as it possibly can be that payment will be made, even though it may be delayed then no provision is needed. Profit change: nil.

However, the effect on future profits can be substantial. A note to the accounts detailing the possibilities of such changes should be given.

(c) The concepts which are applicable here are (i) going concern, (ii) consistency, (iii) accruals, (iv) prudence.

Following on the revelations in (b) and the effect on sales so far of the advertising campaign, is the partnership still able to see itself as a going concern? This would obviously affect the treatment of valuations of all assets.

Given that it can be treated as a going concern, the next point to be considered is that of consistency. The treatment of the expense item should be treated consistently.

The accruals concept is concerned with matching up revenues and costs, and will affect the decision as to how much of the costs should be carried forward. Some revenue in future periods needs to be expected with a high degree of certainty before any of this expenditure should be carried forward. It does not seem highly likely that large revenues can be expected in future in this case. In any case 75 per cent is a very large proportion of such expenditure to be carried forward. There is no easy test of the validity of the partners' estimates. Granted that under SSAP 13 for development expenditure some of it, under very stringent conditions, can be carried forward. If the partners' estimates can be accepted under this, then profits would be increased by  $75\% \times (50,000 + 60,000) = £82,500$ .

(d) The expected profit/loss is as follows:

	Project A	Project B	Project C
Direct costs to date	30,000	25,000	6,000
Overheads to date	4,000	2,000	500
Future expected direct costs	10,000	25,000	40,000
Future expected overheads	2,000	2,000	3,000
Total of expected costs	46,000	54,000	49,500
Sale price of project	55,000	50,000	57,500
Expected total profit/loss	9,000	(4,000)	8,000
% Complete	75%	50%	15%

When a project is sufficiently near completion then a proportion of the profits can be taken as being realised.

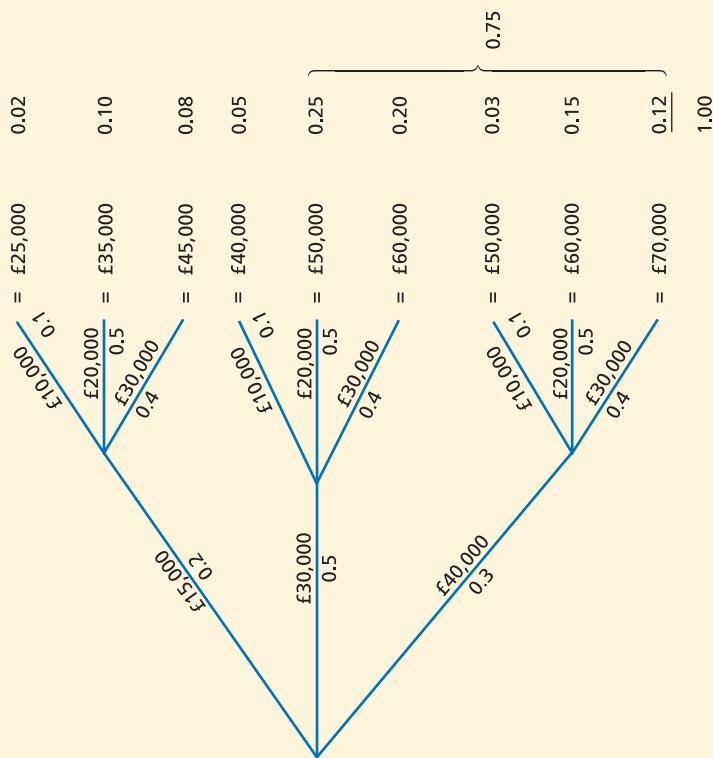
Project A is 75 per cent complete and this indicates profit being taken. Whether or not 75 per cent can be taken, i.e. £6,750, will depend on the facts of the case. If completion at the above figures can be taken for granted then it might be reasonable to do so. Prudence dictates that a lesser figure be taken.

With project B there is an expected loss. Following the prudence concept losses should always be accounted for in full as soon as they become known.

In project C it is too early in the project, 15 per cent completed, to be certain about the outcome. No profit should therefore be brought into account.

Profit, dependent on comments about project A, will therefore be increased by  $£6,750 - £4,000 = £2,750$ .

(e) This is a case where the examiner has dipped into topics from other subjects. What is needed here is a tree diagram to show the probabilities.



There is a probability of 0.75 of achieving £50,000 sales. As this is greater than the specified figure of 0.70 then the stocks should not be written down. Effect on profits: nil.

(f) The opening stock should be shown as the revised figure. If error had not been found this year's profit would have been £7,000 greater.

The adjustment should be shown as a prior period adjustment in the current accounts.

## 10.6

(a)

The Chief Accountant

Uncertain Ltd

Dear Sir/Mr . . . ,

*Report on Draft Profit and Loss Account for the year ended 30 September 20X6*

Further to your letter/our meeting of . . . I would like to offer my suggestions for the appropriate accounting treatment of items (i) to (v).

**10.6 (cont'd)****(i) Redundancy payments: £100,000**

The reorganisation satisfies the requirements of FRS 3, that it had a material effect on the nature and focus of the reporting entity's operations. As a result, the costs should be shown separately on the face of the profit and loss account after operating profit and before interest, and included under the heading of continuing operations. Relevant information regarding its effect on the taxation charge should be shown in a note to the profit and loss account. If there are other exceptional items in the financial period, and the tax effect differs between them, further information should be given, where practicable, to assist users in assessing the impact of the different items on the net profit or loss attributable to shareholders.

**(ii) Closure costs of a factory**

FRS 3 requires that material profits or losses on the termination of an operation should be treated as exceptional and shown separately on the face of the profit and loss account after operating profit and before interest, and included under the appropriate heading of continuing or discontinued operations. In calculating the profit or loss in respect of the termination, consideration should only be given to revenue and costs directly related to it. Clearly, the costs have been identified and are known and there is a loss on the termination. It should not have been deducted from reserves; it must go through the profit and loss account.

**(iii) Change of basis of depreciation: £258,000**

There should only be a change in the basis of depreciation if it brings about a fairer presentation of the accounting results and financial position of the company – see SSAP 12. This SSAP also requires that the depreciation should be shown as normal expenses, rather than as a prior period adjustment.

Because the item is a material one, and makes comparison difficult, a note as to the details should be appended to the accounts.

**(iv) Additional expenses covered by fire: £350,000**

These expenses are covered by FRS 21 as post-balance sheet non-adjusting events. The fire happened after the balance sheet date, and therefore did not affect conditions as at that date. The figures in this year's accounts should not therefore be altered.

If the event was such as to call into question the continuation of the business, then there should be a note to the accounts on the going-concern basis. In this particular instance this does not seem to be the case, but good practice, although not necessary, would be to give details of the event in notes to the accounts.

**(v) Bad debt: £125,000**

The accounts have not yet been approved by the directors, and it does affect the valuation of assets at the year end. FRS 21 would treat it as a post-balance sheet adjusting event. It should therefore be written off as a bad debt.

Where it is considered to be a material and unusual event, there should also be a note attached to the accounts.

Should you like to have further discussions concerning any of the points raised, will you please contact me. I hope that you will find my comments to be of use.

Yours faithfully,

CACA

**(b)****Uncertain Ltd*****Draft profit and loss account for the year ended 30 September 20X6***

Salaries	5,450,490
Manufacturing cost of sales (W1)	<u>2,834,500</u>
	2,615,990
Administration expenses	785,420
Selling expenses (W2)	<u>1,013,600</u>
	1,799,020
Operating profit	816,970
Continuing operations – redundancy payments	100,000
Discontinued operations – factory closure costs	<u>575,000</u>
	675,000
Profit before tax	<u>141,970</u>
Corporation tax (50%) (W3)	<u>70,985</u>
	70,985
Proposed dividend on ordinary shares	<u>125,000</u>
Reduction in retained profits	<u>(34,015)</u>
(W1) £3,284,500 – £100,000 (i) – £350,000 (iv) = £2,834,500	
(W2) £629,800 + £258,800 (iii) + £125,000 (v) = £1,013,600	
(W3) 50% of profits before tax	

**10.7**

(a) (i) Post-balance sheet events consists of those events, whether favourable or unfavourable, which take place between the date of the balance sheet and the date on which the financial accounts and notes are approved by the directors.

(ii) Adjusting events are post-balance sheet events which give extra evidence of what was happening at the balance sheet date. The events included may be included because they are either of a statutory nature or taken into account by convention.

(iii) Non-adjusting events are balance sheet events concerned with matters which did not exist at the balance sheet date.

(iv) A contingent asset/liability is concerned with something which seems to be apparent at the balance sheet date but can only be verified by future events which are uncertain.

(b) Adjusting events: (i) debtor's inability to pay; (ii) subsequent discovery of frauds rendering accounts incorrect; (iii) when net realisable value is used for stock valuation and later shown to be wrong when stock sold; (iv) subsequent discovery of errors rendering accounts incorrect.

Non-adjusting events: (i) change in foreign exchange rates; (ii) strikes; (iii) nationalisation; (iv) share issues.

(c) (i) A material contingent liability should be accrued where some future event will give evidence of the loss, subject to the fact that it should be able to be determined with reasonable accuracy when the accounts are agreed by the directors.

(ii) Material contingent assets should be disclosed in the financial statements if it is very probable that they will be realised.



## 11.3

Rufford plc

Profit and Loss Account for the year ended 31 March 20X6

Turnover		(1)	642
Cost of sales ( $60 + 401 - 71$ )			390
<i>Gross profit</i>			<u>252</u>
Distribution costs ( $33 + 19$ )			
Administrative expenses ( $97 + 8$ )			
<i>Operating profit – continuing operations</i>		(2)	<u>105</u>
Loss on disposal of discontinued operations		(3)	83
			<u>157</u>

Income from other fixed asset investments	(4)
Other interest receivable	14
	25

$$\frac{122}{6} \quad (5)$$

Profit for the year on ordinary activities after taxation  
Dividends (21 + 42)  
Retained profits for the period

*Notes to the accounts:*  
1 Turnover is net of VAT.

Auditor's remuneration	20
Directors' emoluments	45
Hire of plant	12

- 3 Factory closure expenses.
- 4 Income from fixed asset investment is in respect of a listed company.
- 5 Interest payable is on a bank overdraft, repayable within 5 years.
- 6 Tax on profit on ordinary activities:
  - Corporation tax at 50% on profits
  - Transfer to deferred taxation
  - Overprovision in 20X5

Transfer to deferred taxation  
Overprovision in 20X5

Interim 5p per share	21
Final: proposed 10p per share	42
	<u>63</u>

<sup>8</sup> Earnings per share: EPS of 17.1p per share based on earnings of £72,000 and on average 420,000 shares on issue throughout the year (see FRS 3 amendment).

(b) Balance Sheet extracts as at 31 March 20X6

	£000	£000
<i>Creditors: amounts falling due within one year</i>		
Other creditors including taxation and social security (W1)	77	
<i>Provisions for liabilities and charges</i>		
Taxation, including deferred taxation (W2)	33	
<i>Workings:</i>		
(W1) Corporation tax for year to 31 March 20X6	£000	
Proposed dividend	35	
	42	
	<u>77</u>	
(W2) Deferred tax as given	24	
Transferred from profit and loss	9	
	<u>33</u>	

**12.1** Polk Ltd

Balance Sheet as at 31 March 20X4 (£000)

Called-up share capital net paid	1
<i>Fixed assets</i>	
<i>Intangible assets</i>	
Development costs	32
Goodwill	<u>104</u>
<i>Tangible assets</i>	
Land and buildings	230
Plant and machinery	<u>45</u>
<i>Investments</i>	
Shares in undertakings in which the company has a participating interest	275
<i>Current assets</i>	
<i>Stock</i>	
Raw materials and consumables	70
Finished goods and goods for resale	<u>42</u>
<i>Debtors</i>	
Trade debtors	24
Amounts owed by undertakings in which the company has a participating interest	10
Prepayments	<u>2</u>
	<u>78</u>
<i>Creditors: amounts falling due within one year</i>	
Debtures	20
Bank overdrafts	16
Trade creditors	17
Bills of exchange payable	<u>3</u>
<i>Net current assets</i>	
<i>Total assets less current liabilities</i>	<u>504</u>
<i>Creditors: amounts falling due after one year</i>	
Debtures	30
Bills of exchange payable	<u>1</u>
	<u>31</u>
	<u>473</u>

<i>Capital and reserves</i>		
Called-up share capital		350
Share premium account		50
Other reserves:		
Capital redemption reserve	10	
General reserve	<u>20</u>	
		30
Profit and loss account		<u>43</u>
		<u>473</u>

*Notes:*

(i) Called-up share capital consists of:  
50,000 £1 ordinary shares  
50,000 preference shares of 50p each

(ii) Land and buildings:

Cost	250
Depreciation to 31 March 20X3	15
Depreciation for year to 31 March 20X4	<u>5</u>
	<u>20</u>
	<u>230</u>

(iii) Plant and machinery:

Cost	75
Depreciation to 31 March 20X3	22.5
Depreciation for year to 31 March 20X4	<u>7.5</u>
	<u>30</u>
	<u>45</u>

**12.2** Tickers plc

Balance Sheet as at 30 April 20X7 (£000)

<i>Fixed assets</i>		
<i>Intangible assets</i>		
Concessions, patents, licences, trade marks and similar rights and assets	6	
Goodwill	<u>42</u>	48
<i>Tangible assets</i>		
Land and buildings	200	
Plant and machinery	<u>43</u>	<u>243</u>
		291
<i>Current assets</i>		
<i>Stock</i>		
Raw materials and consumables	24	
Work in progress	9	
Finished goods and goods for resale	<u>21</u>	54
<i>Debtors</i>		
Trade debtors	84	
Other debtors	3	
Prepayments and accrued income	<u>2</u>	<u>89</u>
		<u>143</u>

**12.2 (cont'd)***Creditors: amounts falling due within one year*

Debtenture loans	50
Bank loans and overdrafts	3
Trade creditors	26
Bills of exchange payable	5
Other creditors including taxation and social security	39
	<u>123</u>

*Net current assets*

	20
	<u>311</u>

*Total assets less current liabilities**Creditors: amounts falling due after more than one year*

Debtenture loans	40
Trade creditors	<u>2</u>
	42
<i>Provisions for liabilities and charges</i>	
Pensions and similar obligations	8
Taxation, including deferred taxation	<u>6</u>
	14

*Capital and reserves*

Called-up share capital	100
Share premium account	60
Revaluation reserve	23

*Other reserves*

General reserve	30
Foreign exchange reserve	<u>7</u>
Profit and loss account	37
	35
	<u>255</u>

Notes appended to the accounts on the details of tangible assets and depreciation, also exact details of items lumped under group descriptions.

**12.3****Baganza plc***Profit and Loss Account for the year ended 30 September 20X7 (£000)*

Turnover	19,500
Cost of sales (W1)	<u>14,700</u>
Gross profit	4,800

Distribution costs

Administrative expenses (W2)	600
	<u>1,390</u>

Other operating income (W3)

*Profit on ordinary activities before taxation*

Tax on profit on ordinary activities (W4)

*Profit on ordinary activities after taxation*

Extraordinary item

*Profit for the financial year*

Dividends (W5)

Retained profits for the year

	756
	<u>2,933</u>
Earnings per share (W6)	<u>182.4p</u>

*Workings (in £000):*

(W1) Opening stock 2,300 + Purchases 16,000 – Closing stock 3,600 = 14,700  
 (W2) Per trial balance 400 + Research 75 + Depreciation: Property (5% × 2,700) 135 + Plant (15% × 5,200) 780 = 1,390

(W3) Dividends received 249

(W4) Corporation tax 850 + Deferred tax 40 – Overpayment last year 20 = 870

(W5) Dividends: Interim 36 + Final 720 = 756

(W6) EPS = Profit 3,689,000 ÷ Shares 1,200,000 = 307.4p

**Baganza plc***Balance Sheet as at 30 September 20X7*

	£000	£000	£000
<i>Fixed assets</i>			
Tangible assets			
Land and buildings	2,305		
Plant and machinery	<u>820</u>		
Investments		3,125	
		<u>2,000</u>	5,125
<i>Current assets</i>			
Stocks		3,600	
Debtors		<u>2,700</u>	
Cash at bank		60	
		<u>6,360</u>	

*Creditors: amounts falling due within one year*

Trade creditors	2,900
Corporation tax (850 + 360)	<u>1,210</u>
Proposed dividend	720
	<u>4,830</u>

*Net current assets**Total assets less current liabilities*

Taxation, including deferred taxation (460 + 40)

	1,530
	<u>6,655</u>
	500
	<u>6,155</u>

*Capital and reserves*

Called-up share capital

Profit and loss account (2,022 + 2,933)

	1,200
	<u>4,955</u>
	<u>6,155</u>



## 13.1

X Limited  
Balance Sheet at 31 March 20X7

	Notes	£000	£000	£000
<b>Fixed assets</b>				
Intangible assets				
Development costs	(1)	35		
Tangible assets	(2)			
Freehold properties		1,040		
Plant and machinery		850		
Vehicles		285		
		<u>2,175</u>		
Investments	(3)			2,410
Investments in listed shares		200		
<b>Current assets</b>				
Stock	(4)		500	
Debtors and prepayments (see workings)			654	
Cash at bank			<u>439</u>	
<b>Creditors: amounts falling due within 1 year</b>				
Trade creditors and accrual			878	
Other creditors (see workings)			<u>550</u>	

## Net current assets

Total assets less current liabilities  
Creditors: amounts falling due after more than 1 year

12% debentures 20X6

Provisions for liabilities and charges

Deferred taxation

Capital and reserves

Called-up share capital

Share premium

Revaluation reserve

Profit and loss account (see workings)

## Workings:

Profit and loss

Less Bad debt (225,000 × 76%)

Debtors

Less Bad debt (225,000 × 76%)

Other creditors: Proposed dividend

Corporation tax

## Notes to the balance sheet

## 1 Research and development

Research costs are written off immediately. Development costs are carried forward when there is a reasonable certainty of profitable outcome of the project and amortised over the useful life of the project.

## 2 Tangible assets

	Freehold property £000	Plant and machinery £000	Vehicles £000
Cost on 1 April 20X6*	800	1,500	220
Disposal at cost	( 320)		
Addition			200
Revaluation adjustment	<u>612</u>	<u>1,500</u>	<u>420</u>
On 31 March 20X7	<u>1,092</u>	<u>500</u>	<u>55</u>
Depreciation at 1 April 20X6*	80		
Depreciation on disposals	(40)		
Provision in year	<u>12</u>	<u>150</u>	<u>80</u>
	<u>52</u>	<u>650</u>	<u>135</u>
Net book values	<u>1,040</u>	<u>850</u>	<u>285</u>

\* Exam note only: Found by working backwards, leaving these figures as difference.

Note: Freehold property was valued by Messrs V & Co, Chartered Surveyors, at a market value of £1,040,000 as compared with net book value of £428,000. The valuation figure has been included in balance sheet, and £612,000 has been credited to a revaluation reserve. Depreciation for 20X7 has been based on the revalued figure.

## 3 Investments

These had a market value of £180,000 on 31 March 20X7, but as this is not considered by the directors to be a permanent fall in value, the cost figure has been retained.

## 4 Stock

Finished goods	£000
Raw materials	250
Work in progress	200
	<u>50</u>
	<u>500</u>

The current replacement cost of goods is £342,000.

## 5 Deferred taxation

Provision as at 1 April 20X6

Add Provision during year

Less ACT recoverable



13.2		Billinge plc		Profit and Loss Account for the year to 30 June 20X6		Notes		£000	
Turnover – continuing operations									
Cost of sales (W1)								1,500	
Gross profit								<u>82.5</u>	
Distribution costs								67.5	
Administrative expenses (W2)								55	
								<u>320</u>	
Loss on disposal of discontinued operations								37.5	
Tax on profit on ordinary activities								<u>300</u>	
Profit from ordinary activities after taxation								30	
Dividends paid and proposed								270	
Retained profits for the year								130	
Earnings per share								140	
								100	
								<u>40</u>	
								<u>28.0p</u>	

### 13.6

#### Scampion plc

##### Profit and Loss Account for the year ended 31 May 20X2

	£000
Turnover	£000
(3,489 – VAT 259)	3,232
Cost of sales (1,929 + 330 + 51)	<u>2,310</u>
Gross profit	922
Administrative expenses (595 + 25 + 45)	<u>665</u>
Operating profit	257
Income from shares in related companies	5
Other interest receivable (Note 2)	<u>10</u>
	272
Interest payable (Note 3)	18
Written off investments (Note 7)	<u>4</u>
Profit on ordinary activities before taxation	22
Tax on ordinary activities (Note 4)	<u>250</u>
Profit on ordinary activities after taxation	100
Proposed ordinary dividend	150
Retained profits for the year	<u>66</u>
	<u>84</u>
Earnings per share (Note 5)	<u>22.73p</u>

#### Scampion plc

##### Balance Sheet as at 31 May 20X2

	£000
<b>Fixed assets</b>	£000
Tangible assets (Note 6)	1,372
Investments (Note 7)	<u>60</u>
	1,432
<b>Current assets</b>	
Stock	230
Debtors (67 – 45)	22
Investments (market value £115,000)	103
Cash at bank and in hand	<u>84</u>
	439
<b>Creditors: amounts falling due within one year (Note 8)</b>	<u>553</u>
Net current liabilities	( 114)
Total assets less current liabilities	<u>1,318</u>
<b>Creditors: amounts falling due after more than one year (Note 9)</b>	<u>50</u>
	<u>1,268</u>
<b>Capital and reserves</b>	
Called-up share capital	660
Share premium account	225
Profit and loss account (Note 10)	<u>383</u>
	<u>1,268</u>

### Answers to review questions

#### Notes:

- Accounting policies  
The historical cost convention has been used.  
Provisions for depreciation are to write off the cost or valuation over the expected useful lives of the assets, by equal instalments, as follows:  
Freehold buildings 40 years  
Fixtures, fittings or equipment 10 years  
Motor vehicles 5 years  
Depreciation provisions have not been made on freehold land. The basis of the valuation of stock is the lower of cost or net realisable value.
- Other interest receivable
- This is income from government securities £10,000.  
Interest payable  
Interest on loans repayable within 1 year 12,000  
Interest on loans repayable in more than 5 years' time 6,000  
£18,000
- Taxation  
(It has been assumed that 'tax charge based on the accounts for the year' means that the profit shown of £250 is same as the taxable profits.)  
Corporation tax at the rate of 40 per cent on profits has been provided for.
- Earnings per share =  $\frac{150}{660} = 22.73p$
- Tangible assets (£000)  

	Valuation or cost at 31.5.X6	Additions at cost	Less disposals	Depreciation to: 31.5.X6	31.5.X7	Net
Freehold land						
and buildings	1,562	50	400	29	5	1,178
Fittings, fixtures						
and equipment	141	40		38	18	125
Motor vehicles	<u>117</u>	<u>20</u>		<u>40</u>	<u>28</u>	<u>69</u>
	1,820	110	400	107	51	1,372
- Investments  
Valuation by directors of shares in related companies 64,000  
Less Written off during the year 4,000  
60,000
- Creditors  
Trade creditors (487,000 – Tax 120,000) 367,000  
Corporation tax 100,000  
Proposed dividend 66,000  
Bank loan 20,000  
553,000
- Creditors – amounts falling due after more than one year £50,000 12% debentures repayable in X years' time.

**13.6 (cont'd)**  
10 Reserves

Balance 31.5.20X6  
Transfer to profit and loss  
Retained profits for year to 31.5.X7

Revaluation	Profit and loss
150	149
(150)	150
—	84
—	<u>383</u>

**14.1**

- (a) See text of Chapter 14, Section 14.2.  
(b) See text of Chapter 14, Section 14.17.

**14.3**

**Lee Ltd**  
*FRSI Cash Flow Statement (using the direct method)*  
*for the year ended 31 December 20X4*

*Operating activities*  
Cash received from customers 6,550  
Cash paid to suppliers (2,875)  
Cash paid to employees (2,025)  
Other cash payments ( 600)

*Net cash inflow from operating activities*  
*Dividends from joint ventures and associates*  
*Returns on investment and servicing of finance*

Interest paid 1,050  
Taxation —  
( 100)

*Capital expenditure and financial investment*

Payments to acquire tangible assets ( 700)  
*Acquisitions and disposals*

*Equity dividend paid* —

*Management of liquid resources* ( 50)

*Financing* —

Repurchase of debentures ( 100)

*Increase in cash in the period* 100

*Notes to the cash flow statement:*

- 1 Reconciliation of operating profit to net cash inflow from operating activities:

Operating profit 400

Depreciation charges 500

Decrease in stocks 100

Decrease in debtors 50

*Net cash inflow from operating activities* 1,050

*Working:*

Operating profit = profit for the year (300) + interest (100) = 400

**14.4**

**Lee Ltd**  
*IAS7 Cash Flow Statement (using the direct method)*  
*for the year ended 31 December 20X4*

*Cash flows from operating activities*

Cash received from customers 6,550  
Cash paid to suppliers (2,875)  
Cash paid to employees (2,025)

Other cash payments ( 600)

Cash generated from operations 1,050

Interest paid ( 100)

*Net cash from operating activities*  
*Cash flows from investing activities*  
Payments to acquire tangible assets ( 700)

*Net cash used in investing activities*  
*Cash flows from financing activities*  
Payment to repurchase debentures ( 100)

Equity dividends paid ( 50)

*Net cash used in financing activities*  
*Net increase in cash and cash equivalents*  
Cash and cash equivalents at beginning of period (150)

*Cash and cash equivalents at end of period*  
100

200

**14.7**

See text of Chapter 14, Section 14.2.

**14.8**

**Nimmo Limited**

*FRSI Cash Flow Statement (using the indirect method) for the year ended*  
*31 December 20X9 (£000)*

*Net cash inflow from operating activities* 2,150

*Dividends from joint ventures and associates* —

*Returns on investments and servicing of finance* ( 3,200)

*Taxation* ( 3,200)

*Capital expenditure and financial investment*

Purchase of fixed assets (11,800)

Sale of fixed assets 1,000

Net cash outflow for capital expenditure (10,800)

*Acquisitions and disposals* —

*Equity dividend paid* ( 5,100)

*Management of liquid resources* —

*Financing*

Issue of debenture stock 150

*Decrease in cash in the period* (16,800)

Note to the cash flow statement:

- 1 Reconciliation of operating profit to net cash inflow from operating activities:

Operating profit	20,400
Depreciation charges	5,050
Loss on sale of fixed assets	700
Increase in stocks	(10,000)
Increase in trade debtors	(18,100)
Increase in prepayments	( 100)
Increase in trade creditors	4,000
Increase in accruals	200
<b>Net cash inflow from operating activities</b>	<b>2,150</b>

Working:

$$\text{Loss on sale of fixed assets} = 1,000 - (5,500 - 3,800) = (700)$$

**14.9** **FRSI Cash Flow Statement (using the indirect method) for the year ended 30 June 20X1 (£000)**

Track Limited	
<i>Net cash outflow from operating activities</i>	( 75)
<i>Dividends from joint ventures and associates</i>	–
<i>Returns on investments and servicing of finance</i>	(230)
<i>Taxation</i>	

*Capital expenditure and financial investment*

Purchase of fixed assets	(175)
Sale of investments	150
Sale of fixed assets	<u>20</u>
<b>Net cash outflow for capital expenditure</b>	<b>( 5)</b>
<i>Acquisitions and disposals</i>	–
<i>Equity dividend paid</i>	(150)
<i>Management of liquid resources</i>	–
<i>Financing</i>	
Issue of share capital	300
<b>Net cash outflow for period</b>	<b>(160)</b>

Note to the cash flow statement:

- 1 Reconciliation of operating profit to net cash inflow from operating activities:

Operating profit	180
Depreciation charges	110
Profit on sale of fixed assets	( 5)
Increase in stocks	(300)
Increase in trade debtors	(200)
Increase in trade creditors	140
<b>Net cash inflow from operating activities</b>	<b>(75)</b>

Workings:

$$\begin{aligned} \text{Profit before tax: } 670 - 530 &= \text{retained loss of } 140 + \text{tax } (190) + \text{dividends } (130) = 180 \\ \text{Profit on sale of fixed assets} &= 20 - (25 - 10) = (5) \end{aligned}$$

**14.12**

(a) Baker Limited

Forecast net cash position for the three quarters ended 30 Sept 20X7

	31 March 20X7 £000	30 June 20X7 £000	30 Sept 20X7 £000
<i>Receipts</i>			
Trade debtors (W1)	235	290	345
Tangible fixed assets	12	–	–
Investments	10	–	–
Debtentures	<u>–</u>	<u>290</u>	<u>50</u>
	<u>257</u>	<u>290</u>	<u>395</u>
<i>Payments</i>			
Trade creditors (W2)	150	230	285
Administration, selling and distribution expenses	37	40	42
Tangible fixed assets	–	240	–
Investments	–	–	5
Taxation	8	–	–
Dividend	<u>15</u>	<u>–</u>	<u>–</u>
	<u>210</u>	<u>510</u>	<u>332</u>
<b>Forecast net cash flow</b>	<b>47</b>	<b>(220)</b>	<b>63</b>
<i>Add Opening cash</i>	<i>80</i>	<i>127</i>	<i>( 93)</i>
<b>Forecast closing cash</b>	<b><u>127</u></b>	<b><u>( 93)</u></b>	<b><u>( 30)</u></b>

(b) Baker Limited

Forecast FRSI cash flow statement (using the direct method) for the nine months ended 30 September 20X7 (£000)

<i>Operating activities</i>	
Cash received from customers (W1)	870
Cash paid to creditors (W2)	(665)
Other cash payments (admin, selling and distrib.)	<u>(119)</u>
<b>Net cash outflow from operating activities</b>	<b>86</b>
<i>Dividends from joint ventures and associates</i>	–
<i>Returns on investments and servicing of finance</i>	–
<i>Taxation</i>	<u>( 8)</u>
<i>Capital expenditure and financial investment</i>	
Purchase of fixed assets	(240)
Sale of fixed assets	<u>12</u>
<b>Net cash outflow for capital expenditure</b>	<b>(228)</b>
<i>Acquisitions and disposals</i>	–
<i>Equity dividend paid</i>	<u>( 15)</u>
<i>Management of liquid resources</i>	
Addition to 90 day deposit	( 5)
Realisation of 90 day deposit	<u>10</u>
<b>Net cash inflow from management of liquid resources</b>	<b>5</b>
<i>Financing</i>	
Issue of debentures	<u>50</u>
<b>Net cash outflow for period</b>	<b><u>(110)</u></b>

**14.12 (cont'd)**

Note to the cash flow statement:

- 1 Reconciliation of operating profit to net cash inflow from operating activities:

Operating profit	34
Depreciation charges	27
Increase in stocks	(15)
Increase in trade debtors	(30)
Increase in trade creditors	70
<i>Net cash outflow from operating activities</i>	<u>86</u>

Workings:

- W1 Trade debtors: forecast cash receivable:

	31 March 20X7	30 June 20X7	30 Sept 20X7
Sales	£000	£000	£000
Less Closing trade debtors	250	300	350
	65	75	80
	185	225	270
Add Opening trade debtors	50	65	75
Forecast cash receipts from trade debtors	<u>235</u>	<u>290</u>	<u>345</u>

- W2 Trade creditors: forecast cash payable

	31 March 20X7	30 June 20X7	30 Sept 20X7
Opening stock	£000	£000	£000
Purchases (by deduction)	40	30	40
	190	250	295
Less Closing stock	230	280	335
Cost of sales	30	40	55
	200	240	280
Purchases (as above)	190	250	295
Less Closing trade creditors	120	140	150
	70	110	145
Add Opening trade creditors	80	120	140
Forecast cash payments to trade creditors	<u>150</u>	<u>230</u>	<u>285</u>

**15.1**

Contract

Year to 31.03.X7	Year to 31.03.07
Plant	Work certified
Materials	Plant c/d
Wages	Stock and work in progress c/d
Direct expenses	24,000
Gross profit to profit and loss	51,000
	57,000
	4,000
	23,000
	<u>159,000</u>

Year to 31.03.X8	Year to 31.03.X8
Plant b/d	Work certified
Stock and w-in-p b/d	Sale of plant
Materials	15,000
Wages	24,000
Direct expenses	67,000
Penalty	91,000
Gross profit to profit and loss	6,000
	5,000
	38,000
	<u>246,000</u>

Workings:

- (i) Computation profit of year to 31.03.X7

Contract price	360,000
Less Actual expenditure	
(51,000 + 57,000 + 4,000)	112,000
Estimated cost of plant (24,000 – 6,000)	18,000
Estimated expenses year to 31.03.X8	<u>161,000</u>
Estimated total contract profit: estimate made at end of year to 31.03.X7	<u>69,000</u>

Using formula given by question:

$$\frac{\text{Work certified}}{\text{Total contract price}} \times \text{Total estimated profit} = \text{Profit for year to 31.03.X7}$$

$$= \frac{108,000 + 12,000}{360,000} \times 69,000 = 23,000$$

(ii) Depreciation of plant to 31.03.X7 = (24,000 – 6,000) ÷ 18 = 1,000 per month = 9,000.

(iii) Work certified in year to 31.03.X8 = 360,000 – 120,000 = 240,000.

**15.2**

Stannard and Sykes Ltd  
Pier Contract Account

Contract for Seafront Development Corporation valued at £300,000

Materials: direct	58,966	Materials on site c/d	11,660
from store	10,180	Work in progress c/d	151,167
Wages	41,260		
Hire of plant	21,030		
Direct expenditure	3,065		
Overheads	8,330		
Wages accrued c/d	<u>2,826</u>		
	145,657		
Profit and loss account			
(proportion of profit to date)	17,170		
	<u>162,827</u>		
Materials on site b/d	11,660	Wages accrued b/d	2,826
Work in progress b/d	151,167		

A suggested method for prudently estimating the amount of profit to be taken to November 30 is:

$\frac{2}{3} \times$	Cash received	$\times$	Estimated profit (Value of work certified less cost of work certified)	
	Value of work certified		of work certified	
				145,657
Total expenditure to date				
Less Materials on site at November 30 20X8				11,660
Cost of work not yet certified				<u>12,613</u>
Cost of work certified (a)				24,273
Value of work certified (b)				<u>121,384</u>
Total profit to date (b) – (a)				<u>150,000</u>
				<u>28,616</u>

#### 16.1

See text Section 16.6.

#### 16.2

See text Section 16.8.

#### 16.3

See text Section 16.4.

#### 16.4

See text Section 16.8.

#### 17.1

Consolidated Balance Sheet

Goodwill	800
Stock	2,200
Bank	1,000
	<u>4,000</u>
Share capital	4,000
	<u>4,000</u>

#### 17.2

Consolidated Balance Sheet

Fixed assets	48,000
Goodwill: negative goodwill	( 5,000)
Stock	12,000
Debtors	6,000
Bank	<u>4,000</u>
	<u>65,000</u>
Share capital	65,000
	<u>65,000</u>

#### 17.3

Consolidated Balance Sheet

Fixed assets	143,000
Stock	69,000
Debtors	30,000
Bank	<u>8,000</u>
	<u>250,000</u>
Share capital	250,000
	<u>250,000</u>

#### 17.6 Consolidated Balance Sheet

Goodwill	13,000
Fixed assets	94,000
Stock	21,000
Debtors	25,000
Bank	<u>5,000</u>
	<u>158,000</u>
Share capital	150,000
Minority interest	<u>8,000</u>
	<u>158,000</u>

#### 17.7 Consolidated Balance Sheet

Goodwill: negative goodwill	( 2,000)
Fixed assets	48,600
Stock	19,900
Debtors	11,900
Bank	<u>2,400</u>
	<u>80,800</u>
Share capital	80,000
Minority interest	<u>800</u>
	<u>80,800</u>

#### 17.10 Consolidated Balance Sheet

Goodwill	1,000
Negative goodwill	( 2,000)
	<u>( 1,000)</u>
Fixed assets	103,000
Current assets	43,000
	<u>145,000</u>
Share capital	110,000
Profit and loss	30,000
Minority interest	<u>5,000</u>
	<u>145,000</u>

#### 17.11 Consolidated Balance Sheet

Goodwill	8,000
Negative goodwill	( 4,500)
	<u>3,500</u>
Fixed assets	258,400
Current assets	<u>78,100</u>
	<u>340,000</u>
Share capital	200,000
Profit and loss	80,000
General reserve	20,000
Minority interest	<u>40,000</u>
	<u>340,000</u>

## Appendix 2

**18.1** Consolidated Balance Sheet as at 31 December 20X3

Goodwill	12,000
Fixed assets	145,000
Current assets	51,000
	<u>208,000</u>

Share capital  
Profit and loss (102,000 + 16,000)

**18.2** Consolidated Balance Sheet as at 31 March 20X5

Goodwill: negative goodwill	( 17,600)
Fixed assets	302,000
Current assets	67,000
	<u>351,400</u>

Share capital  
Profit and loss [70,000 – (60% of 3,000 = 1,800)]  
General reserve  
Minority interest (40,000 + 8,000 + 5,200)

**18.4** Consolidated Balance Sheet as at 31 December 20X8

Goodwill	6,400
Fixed assets	415,000
Current assets	119,000
	<u>540,400</u>

Share capital  
Profit and loss  
General reserve  
Minority interest

Minority interest 20% of (100,000 + 56,000 + 30,000) = 37,200.  
Goodwill 125,000 – 80% of (100,000 + 22,000 + 30,000) = 121,600 = 3,400;  
49,000 – (30,000 + 6,000 + 10,000) = 3,000; 3,400 + 3,000 = 6,400.  
Profit and loss 78,000 + 27,200 – 2,000 = 103,200.

**19.1** Consolidated Balance Sheet as at 31 March 20X6

Goodwill	20,000
Fixed assets	244,000

Current assets  
Stock (26,000 + 19,000 – 700) 44,300  
Debtors (30,000 + 14,000 – 2,000) 42,000  
Bank 10,000  
96,300

Less Current liabilities  
Creditors (3,000 + 7,000 – 2,000) 8,000

352,300

Financed by:  
Share capital  
Profit and loss (95,000 – 700 + 51,000)  
General reserve

200,000  
145,300  
7,000  
352,300

**19.2** Consolidated Balance Sheet as at 31 December 20X7

Goodwill: negative goodwill  
Fixed assets

Current assets  
Stock (22,000 + 27,000 – 450) 48,550  
Debtors (29,000 – 1,600 + 38,000) 65,400  
Bank 10,000  
123,950

Less Current liabilities  
Creditors (6,000 + 3,000 – 1,600) ( 7,400)  
Net current assets

116,550  
307,550

Financed by:  
Share capital  
Profit and loss (57,000 – 450 + <sup>(55)</sup><sub>90</sub> × 27,000))  
Minority interest (<sup>(35)</sup><sub>90</sub> × (90,000 + 63,000))

175,000  
73,050  
59,500  
307,550

**19.3** Consolidated Balance Sheet as at 31 March 20X3

Goodwill  
Negative goodwill  
Fixed assets

3,100  
( 11,000)  
175,000

Current assets  
Stock (62,000 – 830) 61,170  
Debtors (39,000 – 2,500) 36,500  
Bank 14,000  
111,670

Less Current liabilities  
Creditors (23,000 – 2,500) (20,500)  
Net current assets

91,170  
258,270

Financed by:  
Share capital  
Profit and loss account  
(51,000 – 480 – 350 – 12,000 + (90% × 19,000))  
General reserve  
Minority interest (10% × (50,000 + 30,000))

175,000  
55,270  
20,000  
8,000  
238,270

Goodwill: 58,000 – 90% × (50,000 + 11,000) = 3,100.  
Negative goodwill: 65,000 – (50,000 + 17,000 + 9,000) = 11,000.

## 19.6

### Pagg Group of Companies Consolidated Balance Sheet as at 31 March 20X0

Fixed assets	£000
Intangible assets (Note 1)	1,898
Tangible assets	3,500
	5,398
Current assets	
Stocks (1,300 + 350 + 100 – 10)	1,740
Debtors (3,000 + 300 + 200 – 200 – 35)	3,265
Cash at bank and in hand	270
	5,275
Creditors falling due within 1 year (270 + 400 + 4,000 – 200 – 35)	4,435
Net current assets	840
Total assets less current liabilities	6,238
Minority interests (Note 2)	500
	5,738
Capital and reserves	5,500
Called-up share capital	238
Profit and loss	5,738

#### Notes:

1 Cost of control	Ragg	
Consideration	3,000	Tagg
Less Shares (80%)	800	1,000
Profit and loss (80% × 600)	480	(60%) 300
Goodwill	1,720	(60% × 100) 60
Total amount written off		640
to 31.3.20X0 (5 years)	430	32
Amount not yet written off	1,290	608
		1,898

2 Minority interests	Ragg	Tagg
Share capital called up	1,000	500
Profit and loss	200	150
	1,200	650
(20%)	240	260
		(40%)
		500

#### 3 Profit and loss:

Pagg	1,000
Ragg 80% of (200 – 600)	( 320)
Tagg 60% of (150 – 100)	30
Goodwill (Note 1) 430 + 32	( 462)
Intercompany profit on stock (1/6 of 60)	( 10)
	238

## 20.1

61% Share capital and reserves 31.3.20X5	
Shares bought 31.3.20X3	12,500
Shares bought 31.3.20X5	18,000
	30,500
Negative goodwill	61,000
	3,050

## 20.3

Shares bought	120,000
Profit and loss balance 31.12.20X7	62,000
Add Proportion 20X8 profits before acquisition 7/12 × 69,000	40,250
	102,250

#### Proportion of pre-acquisition profit:

$\frac{120,000}{200,000} \times 102,250 =$	61,350
	181,350

#### Paid-for shares 300,000

Therefore goodwill is 300,000 – 181,350 = 118,650.

## 21.1 Consolidated Balance Sheet as at 31 March 20X5

Goodwill	3,000
Fixed assets	106,000
Current assets	39,000
	148,000
Share capital	100,000
Profit and loss account (39,000 + 9,000)	48,000
	148,000

Workings: Goodwill: Cost 68,000 – 50,000 – 7,000 – Dividend 8,000 = 3,000.

## 21.3 Consolidated Balance Sheet as at 31 October 20X3

Goodwill	23,100
Fixed assets	102,000
Current assets	54,000
	179,100
Share capital	100,000
Profit and loss: (48,000 + 70% of (20,000 – 9,000))	55,700
Minority interest (30% of (60,000 + 18,000))	23,400
	179,100

Workings: Goodwill: Cost 70,000 – 70% of (60,000 + 7,000) = 23,100.



**21.5** Consolidated Balance Sheet of P Ltd & S Ltd as at 31 December 20X6

<i>Fixed assets</i>	
Intangible assets	
Goodwill ( <i>see</i> Workings)	55,000
<i>Tangible assets (Note 1)</i>	680,000
<i>Current assets</i>	
Stocks	160,000
Debtors	140,000
Bank	<u>40,000</u>
	340,000

*Creditors: amounts falling due within 1 year*

Trade creditors	212,000	
Preference dividend proposed	<u>8,000</u>	
Net current assets		<u>220,000</u>
Total assets <i>less</i> current liabilities		<u>120,000</u>
		<u>855,000</u>

## Capital and reserves

Called-up share capital: ordinary shares

£1 fully paid

Reserves

Minority interest

### Note 1 Tangible fixed assets

Buildings	420,000	<i>to date</i>
Plant and machinery	320,000	110,000
Motor vehicles	210,000	70,000
	950,000	90,000
		<u>270,000</u>
		310,000
		250,000
		120,000
		<u>680,000</u>

*Workings:*

(a) Goodwill

(v)	Cost of investment	250,000
	Less Ordinary shares (75%)	150,000
	Reserves (75%)	37,500
		187,500

Less Dividend from pre-acquisition profits

(b) *Minority interest*

(c) Minority interest	
Preference shares	100,000
Reserves 25% × 80,000	20,000
Ordinary shares 25%	50,000
	<u>170,000</u>

The proposed preference dividend could be shown as part of the minority interest.

(c) *Reserves*

P Ltd

S Ltd 75% of extra reserves since acquisition  $80,000 - 50,000 = 30,000$

*Less Dividends received by P Ltd which were from pre-acquisition profits*

## 21.6 Reconciliation of current accounts

Balance b/d	19	Balance b/d In transit	14
Balance c/d	19	Bank (1)	2
		Stock (2)	3
			<u>19</u>

## Reserves

X

20X6 retained profits

Proposed dividend Y 80%

80% Y profits for  $20X6 \times 18$

- Profit in goods in transit

- Profit in Y's stock

Consolidated Balance Sheet for X plc & subsidiary Y plc as at 31 December 20X6

	Cost	Depreciation to date	Net
	£000	£000	£000
Goodwill			<u>108</u>
<i>Tangible fixed assets</i>			
Freehold property	280	18	262
Plant and machinery	<u>245</u>	<u>52</u>	<u>193</u>
	525	70	<u>455</u>

*Less Dividend from pre-acquisition profits*

(b) *Minority interest*

Debtors	250	
Bank	<u>24</u>	
		<u>424.6</u>
<i>Less Current liabilities</i>		
Trade creditors (130 + 80 + 2)	212	
Taxation	<u>44</u>	
Proposed dividends	<u>20</u>	
		<u>148.8</u>
		<u>711.6</u>

Called-up share capital  
400,000 ordinary shares £1  
Reserves (see Workings)

Minority interest (see Workings)

Workings:

Cost of control (remember to calculate it as on 1.1.X6) £000

Cost of investment 300

Less Nominal value shares bought 80%

Reserves 80% × 90

Minority interest

20% of reserves at 1.1.X6 × 90

20% of 20X6 retained profit × 18

20% of shares × 150

Stock

X

Y

In transit

Less Profit element in Y's stock

Profit element in Y's goods in transit

Bank

X 10 + Y 12 + in transit 2

## 22.1

Consolidated Balance Sheet as at 31 December 20X3

Goodwill (650,000 – 400,000 – 60,000)

Fixed assets

Less Depreciation

Current assets

Share capital

Profit and loss account

(190,000 – 10,000) + (48,000 + 2,000)

## 22.3

Consolidated Balance Sheet as at 31 March 20X5

Goodwill (160,000 – 80,000 – 24,000 – 30,000)

Fixed assets

Less Depreciation

Current assets

Share capital

Profit and loss (85,000 + 20,000 – 3,000)

## 23.1

Consolidated Balance Sheet as at 31 December 20X7

Goodwill

Fixed assets

Current assets

Share capital

Profit and loss account

(185,000 + 90% of 80,000 + 63% of 6,000)

General reserve

Minority interest

Minority interest

Shares in Sub1

Shares in Sub2 37% of 10,000

Profit and loss Sub1 10% of 115,000

Sub2 37% of 8,000

Less Cost of shares in Sub2 for minority interest

of Sub1 10% of 30,000

Goodwill: Cost of shares to group in Sub1

in Sub2 90% of 30,000

Less Shares: In Sub1

In Sub2 63% of 10,000

Profit and loss Sub1 90% of 35,000

Sub2 63% of 2,000

## 23.3

Sales Ltd & subsidiaries

Balance sheet as at 31 October 20X5

Negative goodwill (W8)

Fixed assets

Buildings

Plant (W1)

Current assets

Stock (W2)

Debtors (W3)

Bank

Cost

Depreciation

Net

184,000

260,000

92,400

203,700

806,900

296,100

184,000

167,600

159,200

247,400

275,200

50,600

573,200

### 23.3 (cont'd)

#### Less Current liabilities

Creditors (W4)	297,400
Bank overdraft (W5)	26,100
Corporation tax	129,100
Proposed dividends	80,000
Proposed dividends relating to minority interests (W6)	16,000
Net current assets	(548,600)

#### Ordinary share capital

#### Revenue reserves (W7)

Ordinary share capital	24,600
Revenue reserves (W7)	526,400
	200,000
	189,390
	389,390
Minority interest (W9)	137,010
	526,400

#### Workings:

Note: S Ltd owns 75% of M Ltd & 75% × 80% = 60% of C Ltd  
 Plant 102,900 + 170,000 + 92,000 =

(W1) Less (Note (g)) intercompany profit

	364,900
	2,000
	362,900
	204,100

Depreciation 69,900 + 86,000 + 48,200 =

Less 2 years on intercompany profit element 10% × 2,000 × 2

	400
	203,700
(W2) Stock 108,500 + 75,500 + 68,400	252,400
– Unrealised profit (Note (f)) 20% × 25,000	5,000
	247,400

(W3) Debtors 196,700 + 124,800 + 83,500

– Inter-indebtedness (Note (h))

(Note (h))

– Dividends:

80% of 10,000	56,900
75% of 48,000	28,900
	8,000
	36,000

(W4) Creditors 160,000 + 152,700 + 59,200

– Inter-indebtedness (Note (h))

	28,900
	45,600

(W5) Overdraft

– cheque in transit (Note (i))

	37,400
	11,300
	26,100

## Appendix 2

(W6) Minority interests: Shares of proposed dividends  
 Components Ltd: Ordinary 20% × 10,000

Preference

Machinery Ltd: Ordinary 25% × 48,000

2,000
2,000
12,000
16,000

(W7) Reserves S Ltd	154,000
M Ltd	85,000
C Ltd	74,000
	313,000

Add Reduction in depreciation of components

2,000 × 10% × 2 years = 400 × 60%  
 ownership of components

240
313,240

Less Profit on machinery

Unrealised profit on stock

Cost of control of C Ltd on 1.4.X3

60% × 60,000

Minority interest in C Ltd

40% × 74,000

Cost of control of M Ltd on 1.4.X3

75% × 40,000

Minority interest in M Ltd

25% × 85,000

2,000
5,000
36,000
29,600
30,000
21,250

123,850
189,390

(W8) Cost of control

C Ltd at date of purchase. Capital:

Ordinary shares

Reserves

100,000
60,000
160,000

M Ltd had owned 80% =

Then had paid

Bringing about negative goodwill

Of this 25% is owned by minority

interest of M Ltd

M Ltd at date of purchase: Capital

Reserve

24,000
128,000
120,000
40,000
160,000

S Ltd owns 75%

S Ltd paid

Cost of control

Net figure for negative goodwill

15,000
9,000

(W9) Minority interest	
Ordinary shares: 25% M Ltd	30,000
40% C Ltd	40,000
Preference shares	40,000
Increase in profit because of	160
depreciation change $40\% \times 400$	21,250
25% revenue reserves M Ltd $\times 85,000$	29,600
40% revenue reserves C Ltd $\times 74,000$	<u>161,010</u>
Less 25% payment made by M Ltd	24,000
for investment in C Ltd $\times 96,000$	<u>137,010</u>

**24.1** *Consolidated Profit and Loss Account for the year ended 30 April 20X7*

	£000
Turnover (1,100 + 500 + 130)	1,730
Cost of sales (630 + 300 + 70)	<u>1,000</u>
Gross profit	730
Administrative expenses (105 + 150 + 20)	275
Profit on ordinary activities before taxation	<u>455</u>
Tax on profit on ordinary activities (65 + 10 + 20)	95
Profit on ordinary activities after taxation	<u>360</u>
Minority interests (20% $\times$ 40 + 40% $\times$ 20)	16
Profit for the financial year	<u>344</u>
Retained profits from last year (W1)	506
	<u>850</u>
Dividends paid and proposed	200
Retained profits carried to next year (Note 1)	<u>650</u>

*Note 1*

Retained profits carried to next year comprise:

Brodick plc (see W1)	590
Subsidiaries (see W1)	<u>60</u>
	<u>650</u>

*Workings:*

(W1) Retained profits b/d	
Brodick	460
Lamlash	106
Less Minority (20%)	<u>(21.2)</u>
Less Pre-acquisition (80% $\times$ 56)	<u>(44.8)</u>
	40
Corrie	
Less Minority (40%)	12
Less Pre-acquisition	
(60% $\times$ 20)	<u>12</u>
Retained profits for year (344 – 200)	6
	<u>506</u>
	<u>144</u>
	<u>650</u>

**24.2** *Consolidated Profit and Loss Account for the year ended 30 September 20X7*

	£000
Turnover	2,150
Cost of sales	<u>995</u>
Gross profit	1,155
Administrative expenses	<u>475</u>
Profit on ordinary activities before taxation	680
Tax on profit on ordinary activities	50
Profit on ordinary activities after taxation	<u>630</u>
Minority interest (20% $\times$ 180)	36
Profit for the financial year	<u>594</u>
Retained profits from last year	196
	<u>790</u>
Dividends	360
Retained profits carried to next year	<u>430</u>
Earnings per share (594/900)	<u>66p</u>

**Norbreck plc & its subsidiary Bispham Ltd**  
*Consolidated Balance Sheet as at 30 September 20X7*

	£000	£000
Goodwill		48
Fixed assets		<u>1,720</u>
Tangible assets		
Current assets		
Stocks	550	
Debtors (280 + 150 – 80 dividend)	350	
Cash and Bank	<u>50</u>	950
Creditors: amounts falling due within one year		
Trade creditors	240	
Other creditors, taxation and social security	230	
Proposed dividends (270 + 20% $\times$ 100)	<u>290</u>	<u>760</u>
Net current assets		190
Total assets less current liabilities		<u>1,958</u>
Provisions for liabilities and charges		
Taxation, including deferred taxation		<u>480</u>
Capital and reserves		<u>1,478</u>
Called-up share capital		900
Profit and loss account		<u>478</u>
Minority interest (20% $\times$ £500)		<u>1,378</u>
		<u>100</u>
		<u>1,478</u>

**24.2 (cont'd)****Workings:**

Goodwill	£000	£000
Investment		400
Nominal value of shares (80% of 400)	320	
Profit and loss (80% of 40)	<u>32</u>	<u>352</u>
Goodwill on acquisition		<u>48</u>
Retained profits b/d		220
Norbreck	70	
Bispham	40	
– Pre-acquisition	30	
	6	
– Minority interest (20%)	24	
Retained profits of Group b/d	<u>244</u>	
For the year (per consolidated P/L 594 – 360)	234	
	<u>478</u>	

**25.1****(a) Large Ltd & its subsidiary Small Ltd****Consolidated Profit and Loss Account for the year ended 30 September 20X6**

Turnover (10,830 + 2,000 – 108)	£000	£000
Cost of sales and production (3,570 + 1,100 – (2/3 of 108))	12,722	
	<u>4,598</u>	<u>8,124</u>
Administrative and marketing expenses	2,772	
Unpurchased goodwill written off (per Companies Act 1985)	50	
Research costs written off (see SSAP 13)	<u>50</u>	
Profit on ordinary activities before taxation	2,872	
Tax on profit on ordinary activities	<u>5,252</u>	
Profit on ordinary activities after taxation	2,504	
Minority interests	2,748	
	<u>121</u>	
Retained profits from last year	2,627	
	<u>1,290</u>	
Dividend	3,917	
Retained profits carried to next year	<u>2,400</u>	
	<u>1,517</u>	

**(b) Large Ltd & its subsidiary Small Ltd****Consolidated Balance Sheet as at 30 September 20X6**

	£000	£000	£000
<b>Fixed assets</b>			
Intangible assets			
Development costs	180		
Goodwill	48		
Negative goodwill (W1)	<u>(129)</u>		99
Tangible assets			
At cost less depreciation			
<b>Current assets</b>			
Stock (594 + 231 – 27)	798		
Debtors	2,620		
Bank	<u>123</u>		3,541
<b>Creditors: amounts falling due within one year</b>			
Trade creditors		453	
<b>Net current assets</b>			<u>3,088</u>
			<u>7,835</u>
<b>Capital and reserves</b>			
Called-up share capital			6,000
Profit and loss account			1,517
Minority interest (W2)			<u>318</u>
			<u>7,835</u>
<b>Workings:</b>			
(W1) Investment in Small cost			525
Less Share capital		600	
75% Retained earnings of 72		<u>54</u>	654
Negative goodwill on acquisition			<u>129</u>
(W2) Share capital			200
25% Retained earnings of 472			<u>118</u>
			<u>318</u>

(c) In this case merger accounting is not permitted. It can only be used when 90 per cent of the consideration is given as equity share capital, and here Large obtained 75 per cent for cash.

If merger treatment had been used the profits made before the merger could be distributed as dividends.

**26.1**

If Q plc is unable to exercise significant influence over N Ltd, the group comprises the parent undertaking (Q) and two subsidiaries (L and M). N Ltd should be excluded from consolidation (the grounds would be 'severe long-term restrictions') and treated as a fixed asset investment at cost. However, if Q plc is able to exercise significant influence over N Ltd, it should treat it as an associated undertaking using the equity method.

## 26.2

(a) There are two acquisition points. Any dividends received from the pre-acquisition (of the first investment) profits should be applied to reduce the initial investment of £80,000. Similar treatment should be applied to the £110,000 investment. The investment should be shown in the P's company balance sheet at cost of £190,000 less any such dividends received (or it could be shown at valuation). Dividends received and receivable should be shown in the profit and loss account after adjustment for any pre-acquisition element.

(b) At the time the investment became 21 per cent, the net assets of the clothing company were £840,000. The company's share of this is £176,400. The premium paid on acquisition, subject to adjustment for pre-acquisition reserves distributed, is £13,600 (£80,000 + £110,000 - £176,400) and, after any such adjustment required, it should either be written off to the reserves, or capitalised and amortised. Dis-closure in the company's own financial statements is as for trade investments. The group profit and loss should show the company's share of the publishing company's pre-tax profits/losses and its attributable share of the associated undertaking's tax charge on those profits/losses. The group balance sheet carrying value in respect of this investment will comprise the cost of the investment plus the company's share of post-acquisition retained profits, less any amounts written-off either of these.

## 27.1

Solvency, profitability, efficiency, capital structure and shareholder.

## 27.3

Solvency – see text, Section 27.3  
 Profitability – see text, Section 27.2  
 Efficiency – see text, Section 27.4  
 Capital structure – see text, Section 27.6  
 Shareholder – see text, Section 27.5

## 27.5

See text, Section:

- (a) 27.4
- (b) 27.6
- (c) 27.2
- (d) 27.3
- (e) 27.5

## 27.7

- (i) (b) and (d).
- (ii) (b) and (d).
- (iii) (d).
- (iv) If current liabilities greater than current assets, (b) and (d); if current assets greater than current liabilities, (a) and (c).
- (v) (b) and (d) but only after a customer takes up the offer.

## 27.9

- (a) (i) Gross profit as % of sales:  $\frac{400}{1,800} \times \frac{100}{1} = 22.2\%$        $\frac{410}{2,700} \times \frac{100}{1} = 15.2\%$
- (ii) Net profit as % of sales:  $\frac{60}{1,800} \times \frac{100}{1} = 3.3\%$        $\frac{90}{2,700} \times \frac{100}{1} = 3.3\%$
- (iii) Expenses as % of sales:  $\frac{340}{1,800} \times \frac{100}{1} = 18.9\%$        $\frac{320}{2,700} \times \frac{100}{1} = 11.9\%$
- (iv) Stockturn:  $\frac{1,400}{(300 + 200) \div 2} = 5.6$  times       $\frac{2,290}{(280 + 240) \div 2} = 8.8$  times
- (v) Rate of return:  $\frac{60}{(240 + 230) \div 2} \times \frac{100}{1} = 25.5\%$        $\frac{90}{(430 + 440) \div 2} \times \frac{100}{1} = 20.7\%$
- (vi) Current ratio:  $\frac{409}{245} = 1.67$        $\frac{382}{252} = 1.52$
- (vii) Acid test ratio:  $\frac{209}{245} = 0.85$        $\frac{142}{252} = 0.56$
- (viii) Debtor : sales ratio:  $\frac{205}{1,800} \times 12 = 1.37$  months       $\frac{140}{2,700} \times 12 = 0.62$  months
- (ix) Creditor : purchases ratio:  $\frac{245}{1,300} \times 12 = 2.26$  months       $\frac{252}{2,250} \times 12 = 1.34$  months

(b) Business B has made more net profit (£90,000 compared with £60,000) but, in terms of capital employed, B has only managed to achieve a return of 20.7 per cent whereas A has managed a return of 25.5 per cent. A is clearly more efficient in the use of its resources. Reasons as follows – possibly – as not until you know more about the business could you give a definite answer.

- (i) B managed to sell far more merchandise but at lower prices, i.e. took only 15.2 per cent margin as compared with A's 22.2 per cent margin.
- (ii) Maybe less efficient use of mechanised means in the business by B. Note that assuming A and B both use similar depreciation rates, B has more equipment and it is considerably newer than A's.
- (iii) B did not have as much stock lying idle. B turned over stock 8.8 times in the year as compared with 5.6. This could indicate inefficient purchasing by A and/or a likelihood of stock outs and, so, loss of sales.
- (iv) While A waited (on average) 1.37 months to be paid by customers. B managed to collect in 0.62 months on average. Money represented by debts is money lying idle. However, A took longer (2.26 months) to pay its creditors than B (1.34 months). It appears that A was therefore less

## 27.9 (cont'd)

efficient in controlling its debtors whereas B was less efficient in controlling its creditors' payments. Overall, these two results probably cancel each other out so far as explaining A's higher rate of return.

It appears that the key factor may be the less efficient use of its assets by B. A has less than one-fifth of the resources tied up in fixed assets than B, yet has 67 per cent of B's sales and 67 per cent of B's net profit.

## 27.11

(a) The ratios reveal that L Ltd's relative profitability has fallen between the two years. The gross and net profit margins have both fallen, but this may be due to the new sales manager's price-cutting policy, rather than because of any change in costs.

The fall in return on capital employed is not what was hoped for from the new sales price policy. A drop from 31 per cent to 18 per cent is significant and suggests that the change in sales price policy and the investment in new machinery, although with the related increased borrowings, have led to short-term depressed returns. If the increased market resulting from the new sales policy can be retained, it would be worthwhile considering an increase in sales price to a point where a higher rate of return would be achieved.

The company appears solvent – there is no shortage of liquid assets. However, it has taken on considerably more long-term debt in order to fund the market expansion. This will have to be serviced and the level of profit should be monitored to ensure that margins do not fall further, raising the current level of risk to unacceptable levels. As 38.2 per cent (£192,000) of net profits before interest (£502,000) is already being used to meet debt interest payments, compared with only 3.8 per cent in 20X2, it would not take very large changes in costs or selling price to cause this to become a major problem. The current level of gearing will also inhibit the company's ability to raise additional loan funding in future.

<i>Profitability</i>	20X2	20X3
Gross profit : sales	$\frac{540}{900} \times 100 = 60\%$	$\frac{1,120}{2,800} \times 100 = 40\%$
Net profit : sales	$\frac{302}{900} \times 100 = 34\%$	$\frac{310}{2,800} \times 100 = 11\%$
ROCE	$\frac{302 + 12}{929 + 100} = 31\%$	$\frac{310 + 192}{1,267 + 1,600} = 18\%$
<i>Solvency</i>		
Current ratio	$\frac{125}{36} = 3.47 : 1$	$\frac{821}{186} = 4.41 : 1$
Acid test ratio	$\frac{125 - 30}{36} = 2.63 : 1$	$\frac{821 - 238}{186} = 3.13 : 1$
<i>Capital structure</i>		
Capital gearing	$\frac{100}{100 + 929} = 10\%$	$\frac{1,600}{1,600 + 1,267} = 56\%$

(b) Current debtor collection period (i.e. debtor days) =  $\frac{583}{2,800} \times 365 = 76$  days.  
If the collection period were 45 days, the new debtors amount would be:

$$\frac{45}{76} \times 583,000 = 345,200$$

The amount released if a 45-day debtors collection period could be imposed would be £237,800.

## 28.1

(a) *Trading and Profit and Loss Accounts for the year ended 31 December 20X9*

	X	Y
Sales	480,000	762,500*
Less Cost of goods sold	400,000	(+10,000)
Gross profit	80,000	610,000
Less Admin. expenses (-10,000)	40,000	57,500
Selling expenses	15,000	35,000
Net profit	25,000	92,500
		<u>60,000</u>

\* Assumed 25 per cent mark-up despite wrong stock valuation.

(b) <i>Profitability:</i>	X	Y
Gross profit %	20%	25%
Net profit %	$\frac{25}{480} \times \frac{100}{1} = 5.2\%$	$\frac{60}{762.5} \times \frac{100}{1} = 7.87\%$
Stockturn	$\frac{400,000}{40,000} = 10$ times	$\frac{610,000}{45,000*} = 13.6$ times

\* Adjusted to take into account inaccurate valuation.

Return on capital employed (ROCE) (previous owners)

$$\frac{25,000}{200,000} \times \frac{100}{1} = 12.5\% \quad \frac{60,000}{350,000} \times \frac{100}{1} = 17.14\%$$

Based on purchase price of business the ROCE for Adrian Frampton would be:

$$\frac{25,000}{190,000} \times \frac{100}{1} = 13.15\% \quad \frac{60,000}{400,000} \times \frac{100}{1} = 15\%$$

All ratios are favourable for Y. If gross profit ratios remained the same in future together with other expenses then Y business is best value.

However:

- (i) Can gross profit ratios of X be improved as compared with those of Y?
- (ii) Can stockturn be improved?

If so, then X could be cheapest business to buy as it gives a better ROCE.

- (c) (i) Need to know current assets and current liabilities in detail.  
(ii) Are these similar businesses?  
Type of business  
Areas in which situated  
Competition  
Prefer several years' accounts to gauge trends  
Quality of staff and whether they would continue.

## 28.2

(a) 20X4

	A	B	C
	£000	£000	£000
Return on capital of 20% = Profit*	120.0	120.0	120.0
Interest less tax	–	24.0	66.0
		13.2	36.3
Profit for ordinary shares	<u>120.0</u>	<u>109.2</u>	<u>90.3</u>
Ordinary share capital	600	400	50
Profit return (%)	<u>20</u>	<u>27.3</u>	<u>180.6</u>
20X5			
Return on capital of 10% = Profit	60.0	60.0	60.0
Interest less tax	–	24.0	66.0
		13.2	36.3
Profit for ordinary shares	<u>60.0</u>	<u>49.2</u>	<u>30.3</u>
Ordinary share capital	600	400	50
Profit return (%)	<u>10</u>	<u>12.3</u>	<u>60.6</u>

\*Profit is assumed to be after tax but before interest.

- (b) High gearing accentuates the rate of return to the ordinary shareholder. In the zero-gear position of Company A the return to the shareholder simply reflects the change in profits earned on trading. In the high-gear position of Company C the return to the shareholder decreases from 180.6 per cent to 60.6 per cent, i.e. to a reduction of 66.5 per cent as profits reduce by only 50 per cent. Company B reflects an intermediate position with a relatively moderate level of gearing.

High gearing increases risk to shareholders for two reasons. First, if the profits earned are not sufficiently high to meet interest charges then the company may find itself failing since the lenders may seek a winding-up order. Second, the risk is increased simply because of exaggerated fluctuations in the returns which are accentuated in the high-gear situation.

However, it can be seen that if profits earned are higher than the interest rate, this will produce a significantly higher return to the shareholder in a high-gear company. The fact that interest is allowed as a deduction for tax purposes indicates that gearing may give an overall advantage. The market's assessment of the risk position will counter this, and will be based on the nature of the business and management.

## 28.4

- (a) Refer to the text.  
(b)

	Company A	Company B
	£000	%
Ordinary shares	300	800
Revenue: Share premium	300	400
Retained profit	400	200
	<u>1,000</u>	<u>1,400</u>
	200	–
8% preference shares		200
10% loan – debentures	400	
12% loan – debentures	<u>600</u>	<u>200</u>
	1,600	1,600
Total share capital and loan	<u>100.0</u>	<u>100.0</u>

$$\text{Company A Debt : Equity} = \frac{37.5}{62.5} = 60\%$$

$$\text{B Debt : Equity} = \frac{12.5}{87.5} = 14.3\%$$

- (c) Company A is more highly geared than B since it is committed to paying a higher proportion of fixed dividend and interest payments for its profits. A higher level of gearing increases risk. (Note the answer in 28.2 (b) is appropriate.)

(d)

	A	B
Trading profit before interest	200,000	200,000
Less Interest charges	48,000	20,000
Net profit after interest charge	152,000	180,000
Preference dividend	16,000	–
Ordinary dividend	<u>45,000</u>	<u>120,000</u>
Retained profit	91,000	60,000

## 28.6

(a) Equity shares

	20X4	20X5
Reserves	100,000	150,000
Total equity capital	150,000	220,000
Loans	250,000	370,000
Total capital employed	400,000	40,000
Profits (net after tax)	290,000	410,000
Return on total equity	<u>60,000</u>	<u>70,000</u>
	<u>24%</u>	<u>18.9%</u>

(b) To Mr C. Black

The reduction in profits from 24 per cent to 18.9 per cent of total equity needs to be analysed into its causal factors. During the year the net profits have increased but not as fast as the equity capital which has gone up by £120,000 over the year. If the increase reflected an investment late in 20X5 it would reduce returns because a full year's profit could not be earned.

It is therefore essential to examine the nature of the investment and the future. Before shares are bought it is essential to examine future prospects. If these are good the historic analysis may not be important. However, if the new funds were used – clearly prospects may not be good and shares should not be bought.



## 28.6 (cont'd)

(c) Reserves are profits retained within the business. The profits may be from revenue, i.e. from profits which could be distributed as dividends to shareholders or capital – for example where fixed amounts are revalued upwards to reflect current market value.

The creation of reserves reflects an increase in capital in the organisation which would normally be to reflect an increasing scale of operation. In this sense reserves reflect an alternative to issuing new shares. In the case of capital reserves from revaluation – these are simply 'paper adjustments' to value which do not in themselves indicate more resources in the organisation.

Revenue reserves may in fact be distributed as dividends whereas capital reserves would not normally be available for this purpose and are more akin to share capital.

## 28.8

(a) *Profit and Loss Accounts for the year to 31 March 20X8*

	Chan plc	Ling plc	Wong plc
	£000	£000	£000
Operating profit	300	300	300
Interest payable	–	–	(10)
Profit on ordinary activities before tax	300	300	290
Taxation (30%)	(90)	(90)	(87)
Profit on ordinary activities after tax	210	210	203
Dividends: Preference	–	(20)	(30)
Ordinary	(100)	(60)	(40)
	(100)	(80)	(70)
	£110	£130	£133

Retained profit for the year

	Chan plc	Ling plc	Wong plc
(b) (i) Earnings per share			
Net profit after tax and preference dividend	210	210–20	203–30
Number of ordinary shares in issue =	500	300	200
	42p	63.3p	86.5p
(ii) Price/earnings ratio			
Market price of ordinary shares =	840	950	1038
Earnings per share =	42	63.3	86.5
	20	15	12
(iii) Gearing ratio			

Loan capital + preference shares × 100

Shareholders' funds

Chan plc = Nil

Ling plc =  $\frac{200}{300 + 100 + 130} \times 100 = 37.7\%$

Wong plc =  $\frac{300 + 100}{200 + 100 + 133} \times 100 = 92.4\%$

(c) A gearing ratio expresses the relationship that exists between total borrowings (that is, preference share capital and long-term loans), and the total amount of ordinary shareholders' funds. It should be noted that other definitions of gearing are possible and are sometimes used.

Any company with a gearing ratio of, say, 70 per cent would be considered to be high geared, while a company with a gearing ratio of, say, 20 per cent would be low geared.

Gearing is an important matter to consider when investing in ordinary shares in a particular company. A *high*-geared company means that a high proportion of the company's earnings are committed to paying either interest on any debenture stock and/or dividends on any preference share capital *before* an ordinary dividend can be declared. If a company is low geared, then a high proportion of the company's earnings can be paid out as ordinary dividends.

Chan plc has not issued any long-term loans or any preference share capital. Gearing does not, therefore, apply to this company, and all of the earnings may be paid out to the ordinary shareholders.

Ling plc is a relatively low-geared company. It has no debenture stock, and only a small proportion of its earnings are committed to paying its preference shareholders. The balance may then all be declared as an ordinary dividend.

Wong plc is an extremely high-geared company. A high proportion of borrowings (in this case consisting of both debenture stock and preference share capital) means that a high proportion of its earnings has to be set aside for both its debenture holders and its preference shareholders before any ordinary dividend can be declared. As a result, if the profits of the company are low, no ordinary dividend may be payable.

If profits are rising, a high-geared company may not be a particularly risky company in which to purchase some ordinary shares, but the reverse may apply if profits are falling.

For the year to 31 March 20X8, Chan, Ling and Wong's operating profit is identical. Wong is committed to paying interest on its debenture stock (which is allowable against tax), and both Ling and Wong have to pay a preference dividend (which is *not* allowable against tax).

In deciding whether to invest in any of the three companies, there are a great many other factors to be considered, including future prospects of all three companies. However, when profits are fluctuating an ordinary shareholder is more likely to receive a higher return by investing in Chan than by investing in either Ling or Wong. Similarly, an ordinary shareholder can expect a higher return by investing in Wong.

Based on the limited amount of information given in the question, therefore, an investor considering purchasing ordinary shares in only one of these three companies would be recommended to buy shares in Chan plc.

It should be noted that if profits were *increasing*, an investor would be recommended to buy shares first in Wong, then in Ling and finally in Chan. The earnings per share in both Ling and Wong are far higher than in Chan, so there is a much greater chance of an increase in the ordinary dividend, but this is not necessarily the case if profits are falling or fluctuating.

**28.10**

<i>Forecast Profit and Loss Appropriation Accounts</i>		20X6	20X7	20X8
(a) (i)		£000	£000	£000
Forecast profits		1,800	500	2,200
Less Corporation tax (30%)		540	150	660
		<u>1,260</u>	<u>350</u>	<u>1,540</u>
Less Dividends proposed		1,260	350	1,540
Balance sheet extracts		<u>1,260</u>	<u>350</u>	<u>1,540</u>
<i>Shareholders' equity</i>				
Issued ordinary shares of £1 each fully paid		6,000	6,000	6,000
Share premium account		1,000	1,000	1,000
Retained profits		1,650	1,650	1,650
		<u>8,650</u>	<u>8,650</u>	<u>8,650</u>
<i>Current liabilities</i>				
Dividends proposed		1,260	350	1,540
(ii)	<i>Forecast Profit and Loss Appropriation Accounts</i>	20X6	20X7	20X8
		£000	£000	£000
Forecast profits		1,800	500	2,200
Less interest (12% × £2m)		240	240	240
		<u>1,560</u>	<u>260</u>	<u>1,960</u>
Less Corporation tax (30%)		468	78	588
		<u>1,092</u>	<u>182</u>	<u>1,372</u>
Less Dividends proposed		1,092	182	1,372
	<i>Balance Sheet extracts</i>			
<i>Shareholders' equity</i>				
Issued ordinary shares of £1, each fully paid		5,000	5,000	5,000
Retained profits		1,650	1,650	1,650
		<u>6,650</u>	<u>6,650</u>	<u>6,650</u>
<i>Deferred liabilities</i>				
12% debentures		2,000	2,000	2,000
<i>Current liabilities</i>				
Dividend proposed		1,092	182	1,372

(b) (i) If planned expansion is financed by share issue, the forecast return on shareholders' equity for the next three years will be:

$$\begin{aligned} 20X6 \quad 1,260/8,650 \times 100 &= 14.6\% \\ 20X7 \quad 350/8,650 \times 100 &= 4.0\% \\ 20X8 \quad 1,540/8,650 \times 100 &= 17.8\% \end{aligned}$$

(ii) If planned expansion is financed by debenture issue, the forecast return on shareholders' equity for the next three years will be:

$$\begin{aligned} 20X6 \quad 1,092/6,650 \times 100 &= 16.4\% \\ 20X7 \quad 182/6,650 \times 100 &= 2.7\% \\ 20X8 \quad 1,372/6,650 \times 100 &= 20.6\% \end{aligned}$$

Note: All the above figures are, of course, net of tax and should be grossed by a factor of 100/70 if comparison with gross interest rates is to be made (on the assumption of 30 per cent tax rate).

(c) The return on shareholders' equity for the year ended 30 September 20X5 was  $600/6,620 \times 100 = 9.1$  per cent, and it could have been 9.5 per cent if full distribution of the year's profit had been made. To have the return fluctuate between 2.7 per cent and 20.6 per cent, as it will do if the planned expansion is financed by the debenture issue, will surely unnerve all but the most sturdy shareholders. Such a violent swing from year to year will confuse, confound and alarm anyone looking at the shares as an investment.

To finance the planned expansion by a share issue does not improve matters greatly, as it will be seen that the return will still fluctuate between 4.0 per cent and 17.8 per cent. But since we are told that the industry is 'subject to marked variations in consumer demand' it does seem more appropriate to use share capital (by definition risk-bearing) rather than a debenture. The poor profits forecast for 20X7 suggest that it would not take much of a variation from the expected results to show no profit at all, and were this to occur, is there not a possibility that the debenture holders could not be paid their due interest? Failure to pay debenture interest on time would bring in a receiver (assuming the debentures were secured): his function would then be to collect not only the unpaid interest but the capital as well, as failure to pay interest would be a breach of the conditions under which the debenture was issued.

If shareholders are to miss a year's dividends as a result of there being no profits for distribution, the directors can expect a stormy annual general meeting, but that is far less dangerous than the entry of a receiver.

In practice, of course, it is unusual for a company to pay out all profits as dividends, and since shareholders will pay more attention usually to the level of dividends paid than to profits earned, it would make better financial sense if the 20X6 dividend were maintained at or slightly above the 20X5 level, enabling an addition to be made to retained profits. This in turn would enable a fund to be built up to supplement current profits for dividends and/or to redeem the debentures.

The all-shares or all-debentures choice is also an unrealistic one. Although there is much to be said for a broad share base to support what is obviously a risky business, it could make better sense to raise part of the required £2,000,000 by shares and part by debentures. A restrained dividend policy coupled with the use of the (probably enlarged) depreciation charge arising after the expansion had taken place could enable a debenture redemption programme to be established over the course of the next few years.

**28.12**

(a) (i) <i>Shareholders</i>	20X6	20X7
Earnings per share (EPS)	$\frac{9,520}{39,680} = 24p$	$\frac{11,660}{39,680} = 29.4p$
Dividend cover	$\frac{24p}{(2,240 \div 39,680)}$	$\frac{29.4p}{(2,400 \div 39,680)}$
(= EPS ÷ dividend per share)	$= \frac{24p}{5.6p} = 4.3 \text{ times}$	$= \frac{29.4p}{6p} = 4.9 \text{ times}$

**28.12 (cont'd)****(ii) Trade creditors**

	20X6	20X7
Current ratio	$\frac{92,447}{36,862} = 2.5$	$\frac{99,615}{42,475} = 2.3$
Acid test	$\frac{40,210 + 12,092}{36,862} = 1.4 : 1$	$\frac{43,370 + 5,790}{42,475} = 1.2 : 1$

**(iii) Internal management****Debtor ratio/Sales\***

$$\frac{40,210}{486,300} \times 52 = 4.3 \text{ weeks} \quad \frac{43,370}{583,900} \times 52 = 3.9$$

**Return on capital employed**

$$\frac{15,254}{40,740} = 37.4\% \quad \frac{18,686}{50,000} = 37.4\%$$

**(b) Shareholders**

EPS. An increase of 5.4p per share has occurred. This was due to an increase in profit without any increase in share capital.

Dividend cover. Increased by 0.6 times because increase in profit not fully reflected in dividends.

**Trade creditors**

Current ratio. This has fallen but only marginally and it still appears to be quite sound.

Acid test. This has also fallen, but still seems to be quite reasonable.

**Internal management**

Debtor ratio. There appears to have been an increase in the efficiency of our credit control.

Return on capital employed. This has stayed the same for each of the two years. The increase in capital employed has seen a proportional increase in profits.

**28.14**

To the Board of G plc

From AN Other, Accountant

**Subject:** *Potential acquisition of either of companies A Ltd and B Ltd as subsidiaries in the machine tool manufacturing sector. Financial performances assessed.*

As instructed by you I have investigated the financial performances of these two companies to assist in the evaluation of them as potential acquisitions.

It should be borne in mind that financial ratio analysis is only partial information. There are many other factors which will need to be borne in mind before a decision can be taken.

The calculations of the various ratios are given as an appendix.

**Profitability**

While the main interest to the board is what G plc could obtain in profitability from A Ltd and B Ltd, all I can comment on at present is the current profitability enjoyed by these two companies.

Here the most important ratio is that of ROCE (return on capital employed). A's ROCE is 27.2 per cent as compared with B's 15.6 per cent.

The great difference in ROCE can be explained by reference to the secondary ratios of profit and asset utilisation. Both ratios are in A's favour. The profit ratios are A 34 per cent: B 20 per cent. The asset utilisation ratios are A 0.9 per cent: B 0.6, showing that A is utilising its assets 50 per cent better than B. It is the effect of these two ratios that give the ROCE for each company.

The very low working capital employed by A Ltd very much affects the asset utilisation ratio. How far such a low working capital is representative of that throughout the whole year is impossible to say.

**Liquidity**

It would not be sensible to draw a final conclusion as to the liquidity positions of the two companies based on the balance sheet figures. As a balance sheet is based at one point in time it can sometimes be misleading, as a reading of figures over a period would be more appropriate.

A Ltd does appear to have a short-term liquidity problem, as the current assets only just cover current liabilities. The 'quick' or 'acid test ratio' on the face of it appears to be very inadequate at 0.6.

By contrast, B Ltd with a current ratio of 1.4 and a 'quick ratio' of 1.0 would appear to be reasonably liquid.

However, much more light is shed on the position of the companies when the debtor collection period is examined. A collects its debts with a credit period of 9 weeks. In the case of B Ltd this rises to an astonishing 36.7 weeks. Why is this so? It could be due simply to very poor credit control by B Ltd. Such a long credit period casts considerable doubt on the real worth of the debtors. There is a high probability that many of the debts may prove difficult to collect. It might be that B Ltd, in order to maintain sales, has lowered its requirements as to the creditworthiness of its customers. If the credit period were reduced to a normal one for the industry it might be found that many of the customers might go elsewhere.

The problem with debtors in the case of B Ltd is also carried on to stock. In the case of A Ltd the stock turnover is 4.3 falling to 2.8 in B Ltd. There could be a danger that B Ltd has stock increasing simply because it is finding it difficult to sell its products.

**Capital gearing**

A Ltd is far more highly geared than B Ltd: 93.6 per cent as compared with 14.1 per cent. A comparison with this particular industry by means of interfirm comparison should be undertaken.

**Limitations of ratio analysis**

You should bear in mind the following limitations of the analysis undertaken:

- One year's accounts are insufficient for proper analysis to be undertaken. The analysis of trends, taken from, say, five years' accounts would give a better insight.
- Differences in accounting policies between A Ltd and B Ltd will affect comparisons.
- The use of historical costs brings about many distortions.
- The use of industry interfirm comparisons would make the ratios more capable of being interpreted.
- The plans of the companies for the future expressed in their budgets would be of more interest than past figures.

### Conclusions

Depending on the price which would have to be paid for acquisition, I would suggest that A Ltd is the company most suitable for takeover.

A N Other  
Accountant

### Appendix

#### (i) Return on capital employed

$$\frac{\text{Profits before interest and tax}}{\text{Capital employed}} \quad \text{A Ltd} \quad \text{B Ltd}$$

$$\frac{211}{775} \times 100 = 27.2\% \quad \frac{88}{565} \times 100 = 15.6\%$$

#### (ii) Assets utilisation ratios

$$\text{Total assets turnover: } \frac{\text{Turnover}}{\text{Total assets}} \quad \frac{985}{1,140} = 0.9 \quad \frac{560}{990} = 0.6$$

$$\text{Fixed assets turnover: } \frac{\text{Turnover}}{\text{Fixed assets}} \quad \frac{985}{765} = 1.3 \quad \frac{560}{410} = 1.4$$

$$\text{Working capital turnover: } \frac{\text{Turnover}}{\text{Working capital}} \quad \frac{985}{10} = 98.5 \quad \frac{560}{150} = 3.6$$

#### (iii) Profitability ratios

$$\text{Gross profit \% Turnover} \quad \frac{\text{Gross profit}}{\text{Turnover}} \quad \frac{335}{985} \times 100 = 34\% \quad \frac{163}{560} \times 100 = 29\%$$

$$\text{Profit before taxation and interest as \% turnover} \quad \frac{211}{985} \times 100 = 21\% \quad \frac{88}{560} \times 100 = 16\%$$

#### (iv) Liquidity ratios

$$\text{Current ratio: } \frac{\text{Current assets}}{\text{Current liabilities}} \quad \frac{375}{365} = 1.0 \quad \frac{580}{425} = 1.4$$

$$\text{Acid test or Quick ratio: } \frac{\text{Current assets} - \text{Stock}}{\text{Current liabilities}} \quad \frac{220}{365} = 0.6 \quad \frac{440}{425} = 1.0$$

$$\text{Debtor ratio: } \frac{\text{Trade debtors} \times 52}{\text{Credit sales}} \quad \frac{170}{985} \times 52 = 9 \text{ weeks} \quad \frac{395}{560} \times 52 = 36.7 \text{ weeks}$$

#### (v) Capital structure

$$\text{Gearing ratio: } \frac{\text{Long-term borrowing}}{\text{Shareholders' funds}} \quad \frac{220}{555} \times 100 = 39.6\% \quad \frac{70}{495} \times 100 = 14\%$$

#### Proprietary ratio:

$$\frac{\text{Shareholders' funds}}{\text{Tangible assets}} \quad \frac{555}{1,140} = 0.5 \quad \frac{495}{990} = 0.5$$

### 30.1

(a) T (b) F (c) T (d) F (e) T

### 30.4

£40,000

### 30.6

At 31 December 20X5, accumulated depreciation is:

$$30\% \times 30,000 \times \frac{160}{90} = 16,000$$

At 31 December 20X4, accumulated depreciation is:

$$20\% \times 30,000 \times \frac{120}{90} = 8,000$$

Depreciation charge for the year ended 31 December 20X5 is:

$$10\% \times 30,000 \times \frac{160}{90} = 5,333$$

Hence, depreciation provision at 31 December 20X5 is:

$$8,000 + 5,333 = 13,333$$

Backlog depreciation is 16,000 – 13,333 = 2,667

### 30.8

$$\text{Opening stock at average prices} = 50,000 \times \frac{100}{80} = 62,500$$

$$\text{Purchases} = 450,000$$

$$\text{Closing stock at average prices} = 70,000 \times \frac{100}{120} = 58,333$$

$$\text{Current cost of sales} = 454,167$$

$$\text{Historic cost of sales} = 430,000$$

$$\text{Cost of sales adjustment} = 24,167$$

### 30.10

$$\text{Opening working capital} = 7,000$$

$$\text{Closing working capital} = 10,000$$

$$\text{Change in the year} = 3,000$$

At average values:

$$\text{Opening working capital} = 7,000 \times \frac{240}{200} = 8,400$$

$$\text{Closing working capital} = 10,000 \times \frac{240}{280} = 8,571$$

$$\text{Change in the year} = 171$$

The monetary working capital adjustment is £3,000 – £171 = £2,829

**30.12**

	20X3	20X2
Loan stock	£000	£000
Cash	200	200
Net borrowings	<u>145</u>	<u>50</u>
	55	150

$$\text{Average net borrowings} = \frac{55,000 + 150,000}{2} = 102,500$$

	20X3	20X2
Ordinary shares	£000	£000
Reserves	250	250
Current cost reserve	370	340
Shareholder interest	<u>35</u>	<u>30</u>
	655	620

$$\text{Average shareholder interest} = \frac{655,000 + 620,000}{2} = 637,500$$

$$\text{Gearing adjustment percentage is: } \frac{102,500}{102,500 + 637,500} = 13.85\%$$

**30.14**

Many accountants believe that during a period of inflation financial reports prepared under the historical cost convention are subject to a number of severe limitations. The question lists five such limitations, and a brief explanation of each one is as follows.

**1 Stocks are undervalued.**

Stock values are normally based on historical costs. This means that the historical closing stock will usually have cost less than its current economic value. Hence the cost of sales will tend to be higher than it would be if the closing stock was revalued at its current cost. As a result, the gross profit will be higher, and the entity may then pay out a higher level of net profit.

If the entity pays out a high level of profit and at the same time it has to pay more for its stocks (because prices are rising), it may be left with insufficient funds for it to be able to replace its stocks with the same *quantity* of goods that it had sold during the previous period. Hence it will not be able to operate at the same level of activity as it had previously experienced.

**2 Depreciation is understated.**

Depreciation is usually based on the historical cost of fixed assets. Such assets will normally increase in price during a period of inflation. The annual depreciation charge, therefore, may not reflect the amount needed to be able to replace the assets at their increased cost. Consequently, the accounting profit tends to be overstated, and this may mean that too much profit is withdrawn from the business. The cash resources may then prove insufficient to replace the assets at the end of their useful life. Like the stock valuation problem, therefore, the business may not be able to operate at the same level of activity that it has previously experienced.

**3 Gains and losses on net monetary assets are undisclosed.**

Net monetary assets include both long- and short-term loans made to and by the entity, for example, debentures, and trade debtors and trade creditors. During a

**Appendix 2**

period of inflation, an entity gains on both long- and short-term borrowings. The gain arises because although the amount originally borrowed will eventually be repaid at its face value, its purchasing power will have been reduced; for example, £5,000 borrowed in 20X1 will not purchase the same quantity of goods in 20X5 as it did in 20X1. In 20X5 the borrower may have to pay (say) £8,000 to purchase the same quantity of goods as he might have done in 20X1. Hence the entity will have, in effect, gained £3,000 by borrowing during an inflationary period, because it is effectively having to pay back less in purchasing power (or in real terms, as it is known) than it borrowed.

By contrast, if the entity has *loaned* money during a similar period (perhaps by allowing its customers to buy goods on credit), it loses money because the purchasing power of the respective debts (which are fixed in monetary terms) will purchase fewer goods when they are eventually settled than they would have done when they were first incurred.

In financial reports prepared under the historical cost system, neither the gross nor the net effect of these types of transactions is disclosed.

**4 Balance sheet values are unrealistic.**

Fixed assets are normally recorded in the balance sheet at their original cost, that is, at their historical cost. During a period of inflation, the historical cost of the assets may be far less than their *current* cost, that is, at the value the entity places on them at the time that the financial reports are prepared. Hence the financial reports give a misleading impression of the entity's net worth as at the time that they are prepared.

**5 Meaningful periodic comparisons are difficult to make.**

A meaningful comparison of financial reports prepared under the historical cost convention over several accounting periods may be misleading since such accounts will normally have been prepared using, say, pounds sterling in one period and pounds sterling in all subsequent periods.

Financial reports prepared in such a way are not, however, strictly comparable. For example, £100 in 20X1 is not the same as £100 in 20X5, because £100 would not purchase the same amount of goods in 20X5 as it did in 20X1. In fact the comparison is just as meaningless as comparing financial reports prepared, say, in dollars with, say, reports prepared in euros. It is obvious to most users of such reports that 100 dollars are not the same as 100 euros, but it is less obvious that £20X1 are not the same as £20X5.

In order to be able to make a meaningful comparison between financial reports prepared in different time periods, therefore, it is desirable to translate them into the same currency, that is, to use the same price base. The argument behind this point is similar in principle to that used in translating dollars into euros or euros into dollars.

**31.1**

See text, Section 31.6.

**31.2**

See text, Section 31.6. Difficulties lie in trying to give these measures a value in money that would get universal acceptance. How can you place a money value on living conditions, for example?

**31.3**

See text, Section 31.7.

**31.4**

Basically, there are many things that could be done to improve the various parts of 'social well-being'. However, (a) benefits cost a lot of money in the short term, and (b) beneficial effects are felt only in the long term. Examples are better education and better housing.

**31.5**

See text, Section 31.10, social programme measurement.

**31.7**

The accountant's model of income measurement, with its reliance upon data that can be expressed in financial terms, can be said to be too narrow and fails to consider wider social and environmental issues. The air we breathe does not have a 'price' in financial terms. Yet, what businesses do may cause costs to be incurred by others as a result of their abuse of the air in their environment. Similarly, the true cost of a natural resource may never be accounted for – the rainforests being a very well known example: they are being removed upon payment of a financially stated price, but the price only satisfies the seller, it does little to replace the environment being destroyed. Thus the price being added into the cost of manufacturing paper from the trees in the rainforests does not include the social and environmental cost of their destruction.

Thus, in the income model, it could be argued only in a narrow sense of the term that 'capital' is being maintained. In reality, the destruction of natural resources that are not or cannot be replaced means that the 'capital' is being consumed and future consumption impaired as a result.

It is for reasons of this type that it can be argued that accountants ought to be involved in disclosing the effects of a company's business activities upon its environment, for only by doing so will a true view of a company's activities be revealed.

**32.1**

See text, Section 32.1.

**32.2**

See text, Section 32.3.

**32.3**

See text, Section 32.4.

**32.4**

See text, Section 32.6.

**33.1**

See text, Section 33.1.

**33.2**

See text, Section 33.5.

**33.3**

See text, Section 33.6.

**33.4**

See text, Section 33.8.

**34.1**

See text, Sections 34.1 and 34.2.

**34.2**

See text, Sections 34.1 and 34.2.

**34.3**

See text, Section 34.2.

**34.4**

See text, Section 34.3.

**34.5**

See text, Section 34.4.

**34.6**

See text, Section 34.7.

**35.1**

(i) *f, h*, (ii) *m*, (iii) *a, c, e, g, i, 4/5 of n.t.v.*,  $\frac{3}{4}$  of *w, x*, (iv) *b, d, i, 1/5 of n, p, q*, part of  $\frac{1}{4}$  of *u*, (v) *l, r, s*, part of  $\frac{1}{4}$  of *u*, (vi) *o, k, v, y*.

**35.3**

Raw materials consumed (120,000 + 400,000 – 160,000)

Haulage costs

Direct labour 70% × 220,000

Royalties

(a) **Prime cost**

*Factory overhead*

Factory indirect labour

Other factory indirect expenses

Travelling expenses

Depreciation: Factory machinery

Firm's canteen expenses

(b) **Production cost**

*Administration expenses*

Salaries

Travelling expenses

Firm's canteen expenses

Depreciation: Acctg. and office machinery

Cars of admin. staff

Other administrative expenses

*Selling and distribution expenses*

Salaries

Commission

Travelling expenses

Depreciation: Equipment

Sales staff cars

Other selling expenses

Carriage costs on sales

*Finance costs*

Interest on loans and overdrafts

(c) **Total cost**

360,000  
4,000  
154,000  
1,600  
519,600

66,000  
58,000  
100  
38,000  
4,000

166,100  
685,700

72,000  
200  
2,000  
2,000  
1,600  
42,000

119,800

8,000  
1,400  
2,900  
300  
3,800  
65,000  
7,800

89,200

3,800  
898,500



## 36.1

(a) Answers to be drafted by students in proper memo form.

Introduction:

Marginal cost is:

Direct labour

Direct materials

Variable expenses

3.00  
3.50  
2.25  
8.75

As selling price of £10 exceeds marginal cost £8.75 we should accept (but see below)\*

*Proof*

Direct labour

Direct materials

Indirect manufacturing costs

Variable

Fixed

Administration expenses

Selling and distribution expenses

Finance expenses

Sales

Sales (2,400,000 + 100,000)

Profit

*Without new order*  
600,000  
700,000  
450,000  
50,000  
120,000  
60,000  
20,000  
2,000,000  
2,400,000  
400,000

*With new order*  
630,000  
735,000  
472,500  
50,000  
120,000  
60,000  
20,000  
2,087,500  
2,500,000  
412,500

\*Depends on how other things affected besides simple accounting calculation, such as whether there is sufficient spare manufacturing capacity to produce the extra units.

(b) For extra order:

Marginal costs per unit (*see (a)*)

Depreciation (£3,000 p.a. ÷ 15,000)

Running costs (£6,000 p.a. ÷ 15,000)

Marginal costs per unit

8.75  
0.20  
0.40  
9.35

As £9.35 is greater than selling price £9.25 do NOT accept.

## 36.3

Year 1

Sales £87 × 2,700

Less Variable costs

Direct labour £9 × 3,600

Direct materials £15 × 3,600

Variable expenses £6 × 3,600

Total variable cost

Less in (A) Valuation closing stock

900 × £198,000

3,600

Fixed indirect manufacturing costs

Less in (B) Valuation closing stock

900 × £198,000

3,600

Total costs

Gross profit

171,000

63,900

108,000

27,000

81,000

90,000

198,000

49,500

148,500

86,400

313,200

(B)

(A)

313,200

35,100

58,500

23,400

117,000

27,000

144,000

36,000

108,000

90,000

256,500

63,692

198,000

115,200

192,808

120,392

313,200

(B)

(A)

313,200

35,100

58,500

23,400

117,000

27,000

144,000

36,000

108,000

90,000

256,500

63,692

198,000

115,200

192,808

120,392

313,200

<b>Year 3</b>		
Sales £87 × 3,300	(A) 287,100	(B) 287,100
Less Variable costs		
Direct labour £9 × 3,750	33,750	33,750
Direct materials £15 × 3,750	56,250	56,250
Var. expenses £6 × 3,750	22,500	22,500
Total variable cost	112,500	112,500
Add in (A) Op. stock b/d	36,000	
Add in (B) Op. stock b/d		63,692
	148,500	176,192
Less in (A) Valuation of closing stock		
$\frac{1,650}{3,750} \times 112,500$	49,500	
	99,000	
Fixed indirect manufacturing costs	90,000	90,000
	266,192	
Less in (B) Valuation of closing stock		
$\frac{1,650}{3,750} \times (£112,500 + £90,000)$	89,100	
Total costs	189,000	177,092
Gross profit	98,100	110,008

### 36.5

(a) Subject to points raised in (c) the extra production should be taken on, as this results in greater profits amounting to £1,562,000. Proof is as follows:	
Extra revenue 60,000 × £150	9,000,000
Less Extra costs	
Direct materials (W1)	3,141,600
Direct labour 60,000 × 18.70 × 120% =	1,346,400
Variable overhead 60,000 × 7.50	450,000
Fixed costs	2,500,000
Extra profit	7,438,000
(W1) 60,000 × 74.80	4,488,000
Less saving 10% on extra materials saving 10% on materials used on day shift	448,800
10% × 120,000 × 74.80	897,600
	1,346,400
	3,141,600

(b) Break-even point to justify night shift	
Sale price per unit	150.00
Less Costs per unit	
Material	74.80
Direct labour 18.70 + 20%	22.44
Variable overhead	7.50
Contribution per unit	104.74
	45.26
Total fixed costs	2,500,000
	45.26
	= Break-even at 55,236 units

Note: No 10% reduction on materials because demand less than extra 60,000 units.

- (c) (i) Would firm be able to maintain selling price of £187 on first 120,000 units per year?  
(ii) Would it have been more profitable to subcontract extra units needed?  
(iii) Could we diversify into a more profitable alternative product?  
(iv) Could extra day facilities have been more profitable?

### 36.7

(a)

#### Arndcliffe Ltd

#### Revenue Statement for the year ended . . .

	Crowns	Kings	Total
Sales	60,000	25,000	85,000
Direct costs:			
Raw mats	8,000	2,000	10,000
Labour	20,000	10,000	30,000
M/c running costs	40,000	15,000	55,000
Contribution	20,000	10,000	30,000
Rate of contribution to sales	33.3%	40%	35.3%



## 36.9

Crowns manufactured per hour =  $20,000/8,000 = 2.5$  per hour  
Kings manufactured per hour =  $10,000/2,000 = 5$  per hour  
Kings gives best contribution rate, so produce Kings up to maximum requirements.

(c) Product mix with extra machine  
As maximum requirements for Kings have already been met in (b), all new output will be of Crowns.

Extra (10,000 hours $\times$ 2.5) = 25,000 $\times$ £3 =	75,000	
	<u>96,000</u>	
Contributions: Crowns (33.3%)		32,000
Kings (40%)		<u>36,000</u>
Hire of extra machine		20,000
Floor space costs		15,000
Insurance		<u>600</u>
		35,600
		<u>32,400</u>

- (i) Market demand maintained.
- (ii) Flexibility of return of extra machine if demand falls.
- (iii) To see if wholesaler will guarantee minimum orders.
- (iv) Are there outlets possible other than wholesaler?
- (v) Selling price to wholesaler.

## Paul Wagtail

	Marginal method	Absorption method
Purchases of raw mats (125,000 – 2,100)	122,900	122,900
Carriage of raw materials	<u>1,500</u>	<u>1,500</u>
	124,400	124,400
Less Stock raw materials	8,900	8,900
Cost of raw materials consumed	<u>115,500</u>	<u>115,500</u>
Production wages	105,270	105,270
Prime cost	<u>220,770</u>	<u>220,770</u>

Administration expenses	46,700	46,700
Distribution expenses	25,400	25,400
Selling expenses	23,800	23,800
Insurance (60%)	2,880	2,880
Heating and lighting (60%)	2,160	2,160
Deprn: delivery vehicles	<u>35,200</u>	<u>35,200</u>
	136,140	136,140
Net profit	<u>54,585</u>	<u>58,443</u>

$$\text{Valuations: } \textit{Marginal} \frac{500}{10,000} \times 220,770 = 11,038$$
$$Absorption \frac{500}{10,000} \times 303,120 = 15,156$$
$$\frac{600}{9,500} \times 292,082 = 18,447$$
$$\text{Absorption} \frac{600}{9,500} \times 287,964 = 18,187$$

(b) See text.

**36.13**

(a)	K	L	M	N
Direct labour and materials	28	56	120	64
Variable overheads	8	16	26	24
Fixed overhead	4	8	14	12
Total cost per unit	40	80	160	100
Add Profit 10 per cent	8	16	32	20
Selling price	48	96	192	120

(b) Discontinue M. The others are above marginal cost whereas M is below it.

(c)	(i) Followed our advice	(ii) Produced all items
Sales	K 100 × £66	6,600
	L 100 × £78	7,800
	M 100 × £140	14,000
	N 100 × £98	9,800
		<u>38,200</u>

**Less Costs**

Direct labour and materials	14,800	26,800
(i) (28 + 56 + 64) × 100		
(ii) (28 + 56 + 120 + 64) × 100		
Variable overhead	4,800	7,400
(i) (8 + 16 + 24) × 100		
(ii) (8 + 16 + 26 + 24) × 100		
Fixed overhead	3,800	3,800
	<u>23,400</u>	<u>38,000</u>
Net profit	800	200

Note: The net profit or loss could have been worked out using contributions per items e.g. (i) Contributions per unit (i.e. Selling price less Marginal cost).

K 66 – (28 + 8) =	30
L 78 – (56 + 16) =	6
N 98 – (64 + 24) =	10
Less Fixed costs	<u>3,800</u>
Net profit	<u>800</u>

In (ii) the contribution from M would be negative.

(d) Discontinue K and N. All other items are above marginal cost.

(e)

	(i) Followed our advice	(ii) Produced all items
Sales	K 100 × £34	3,400
	L 100 × £96	9,600
	M 100 × £280	28,000
	N 100 × £78	7,800
		<u>48,800</u>

**Less Costs**

Direct labour and materials	17,600	26,800
(i) (56 + 120) × 100		
(ii) (28 + 56 + 120 + 64) × 100		
Variable costs	4,200	7,400
(i) (16 + 26) × 100		
(ii) (8 + 16 + 26 + 24) × 100		
Fixed overhead	3,800	3,800
	<u>25,600</u>	<u>38,000</u>
Net profit	12,000	10,800

**37.1**

	Production departments			Service departments		
	A	B	C	D	K	L
Indirect lab.	8,000	12,000	16,000	4,000	3,000	6,000
Other exp.	5,400	6,200	7,200	3,000	9,000	4,000
	<u>13,400</u>	<u>18,200</u>	<u>23,200</u>	<u>7,000</u>	<u>12,000</u>	<u>10,000</u>
Apportionment of costs:						
Dept K	2,400	3,000	3,600	1,800	(12,000)	–
Dept L	3,500	–	4,500	2,000	–	(10,000)
Dept M	–	5,360	3,350	4,690	–	–
	<u>19,300</u>	<u>26,560</u>	<u>34,650</u>	<u>15,490</u>	–	–

(a) Overhead rates per direct labour hour

Department A	£ $\frac{19,300}{4,000}$	= £4.825
Department C	£ $\frac{34,650}{8,900}$	= £3.89

(b) Overhead rates per machine hour

Department B	£ $\frac{26,560}{5,200}$	= £5.11
Department D	£ $\frac{15,490}{4,800}$	= £3.23

**37.2***Job Cost Sheet Job 351 Dept. A*

Direct materials	760.00
Direct labour	112 × £5
Factory overhead	112 × £4.825
	<u>1,860.40</u>

*Job Cost Sheet Job 352 Dept. B*

Direct materials	3,597.00
Direct labour	1,024.00
Factory overhead	1,287.72
	<u>5,908.72</u>

*Job Cost Sheet Job 353 Dept. C*

Direct materials	2,000.00
Direct labour	2,340.00
Factory overhead	1,517.10
	<u>5,857.10</u>

*Job Cost Sheet Job 354 Dept. D*

Direct materials	1,998.00
Direct labour	1,080.00
Direct overhead	413.44
	<u>3,491.44</u>

*Job Cost Sheet Job 355 Depts. C and B*

Dept C	Direct materials	1,680.00
	Direct labour	1,920.00
	Factory overhead	1,244.80
Dept B	Direct materials	204.00
	Direct labour	240.00
	Factory overhead	204.40
		<u>5,493.20</u>

**37.5**

(a) See text, Section 37.5.

(b) (i)	Materials	Labour	Overhead
	Finished items	4,000	4,000
	W-I-P (600)	450	330
	Total units	<u>4,450</u>	<u>4,330</u>

(ii) Cost per complete unit	
Material	$\frac{\pounds 8,172 \div 4,540}{1.80} =$
Labour	$\frac{\pounds 7,120 \div 4,450}{1.60} =$
Overhead	$\frac{\pounds 5,196 \div 4,330}{1.20} =$
	<u>£4.60</u>

(iii) Value of work in progress	
Material	$540 \times 1.80 =$
Labour	$450 \times 1.60 =$
Overhead	$330 \times 1.20 =$
	<u>£2,088</u>

**37.7**

(a) Allment: where overheads traced directly to units.

Apportionment: where overheads not directly traceable and have to be apportioned between units.

Absorption rates: the total amount of overheads calculated as being charged to each unit.

(b) Because the figures belong to the future and therefore cannot be known precisely. (c) (i) and (ii). Note that parts (i) and (ii) illustrate two different methods in use. The method in (iii) is not in the text.

Continuous apportionment (repeated distribution) method:

Line		Production departments			Service departments	
		A	B	C	X	Y
1	Allocation per analysis	14,000	12,000	8,000	4,000	3,000
2	Allocation of X (4,000) (35%)	1,400 (30%)	1,200 (20%)	800	(4,000) (15%)	<u>600</u> 3,600
3	Allocation of Y (3,600) (30%)	1,080 (40%)	1,440 (25%)	900 (5%)	180	(3,600)
4	Allocation of X (180) (35%)	63 (30%)	54 (20%)	36	(180) (15%)	27
5	Allocation of Y (27) (30%)	<u>8 (40%)</u>	<u>12* (25%)</u>	<u>7 (5%)</u>	0	(27)
		<u>16,551</u>	<u>14,706</u>	<u>9,743</u>	(= total 41,000)	

\*Rounded off

Explanation:

Steps:

(1) Allocate X overheads to others by % shown.

(2) Allocate Y overheads to others by % shown.

Keep repeating (1) and (2) until the figures left under X and Y are insignificant.

(iii) Elimination method:

Line		Production departments			Service departments	
		A	B	C	X	Y
1	Allocation per analysis	14,000	12,000	8,000	4,000	3,000
2	Allocate service (35%) dept X	1,400	1,200 (20%)	800	<u>4,000</u> (15%)	600
3	Allocate service dept Y (30/95)	<u>1,137</u> (40/95)	<u>1,516</u> (25/95)	<u>947</u>	<u>9,747</u>	(3,600)
		<u>16,537</u>	<u>14,716</u>		(total 41,000)	—

Explanation:

Steps:

(1) Allocate service department overheads which does largest proportion of work for other departments, i.e. department X.

(2) Allocate next service department per (1), in this case is only Y.

(3) When doing (2) nothing is charged to service departments already allocated, i.e. in this case X.

(4) Note that since (3) happens the ratios in the next allocation change. As X 5% of Y is not returned then A gets 30/95 of Y, not 30% and so on.

(iv) The answer will depend on whichever approach is adopted. No one can categorically state which method is the most accurate; there is no 'ideal' method.

### 37.9

(a) and (b) See text.

(c) *Batch No. 23*

Raw materials $300 \times 1.60$	480
Direct labour $4.20 \times 20$ hours	84
Setting up of machine	21
Overheads $3.60 \times 20$ hours	72
Total cost	<u>657</u>
Cost per unit $657 \div 300 = £2.19$	

(ii) *Batch No. 23*

Raw materials $300 \times 1.60$	480.00
Less Received for scrap $20 \times 0.86$	<u>17.20</u>
Direct labour:	
Normal $20 \times 4.20$	84.00
Rectification $9 \times 4.20$	<u>37.80</u>
Setting up:	
Normal	21.00
Rectification	<u>18.00</u>
Overheads: Running time $3.60 \times 20$	72.00
Rectification $3.60 \times 9$	<u>32.40</u>
	<u>728.00</u>

Per usable unit  $£728 \div 280 = 2.60$

(iii) Loss because of extra costs  $728 - 657 =$   
Loss because of faulty products  $657 \times 20/300$

### 38.1

	July	Aug	Sept	Oct	Nov	Dec
Opening stock	148	138	156	220	280	232
Add Production	<u>150</u>	<u>202</u>	<u>282</u>	<u>324</u>	<u>248</u>	<u>160</u>
	298	340	438	544	528	392
Less Sales	<u>160</u>	<u>184</u>	<u>218</u>	<u>264</u>	<u>296</u>	<u>204</u>
Closing stock	138	156	220	280	232	188

### 38.2

(a) Opening stock 144  
Add Production ?  
Closing stock (C) 144  
Missing figure (B) must be 4,650  
Missing figure (C) must then be 150

Less Sales total – see question

Closing stock

Missing figure (B) must be 4,800

Missing figure (C) must then be 4,656

Equal production per month  $4,656 \div 12 = 388$  units.

(b) Given figures per (a)

	J	F	M	A	M	J	J	A	S	O	N	D
Opening stock	144	202	50	128	66	94	182	360	458	336	394	332
Add Production	388	388	388	388	388	388	388	388	388	388	388	388
	532	590	438	516	454	482	570	748	846	724	782	720
Less Sales	330	540	310	450	360	300	210	290	510	330	450	570
Closing stock	<u>202</u>	<u>50</u>	<u>128</u>	<u>66</u>	<u>94</u>	<u>182</u>	<u>360</u>	<u>458</u>	<u>336</u>	<u>394</u>	<u>332</u>	<u>150</u>

Lowest closing figure is 50 units in February. It is also below 80 in April.

If stock is not to fall below 80 units an extra  $80 - 50 = 30$  units will have to be produced in February making production for that month of 418 units; and an extra 14 will need to be produced in April making production for that month 402 units.

### 39.1

(a)

Took: Cash Budget

	May	Jun	Jul	Aug	Sept	Oct
Balance b/d		10,800	8,800	2,800		
Overdraft b/d					13,200	19,200
Receipts from debtors	800	8,000	16,000	24,000	18,000	10,000
Capital	10,200					
	11,000	18,800	24,800	26,800	4,800	(9,200)
Payments	200	10,000	22,000	40,000	24,000	14,000
Balance c/d	10,800	8,800	2,800			
Overdraft c/d				13,200	19,200	(23,200)

(b)

There are the possibilities of delaying payments to creditors, delaying purchases or somehow getting debtors to pay up more quickly. Apart from these it is possible that a credit factoring firm could help in 'buying' the amounts of debtors from Ukridge.

If none of these is possible only a really fantastic product could warrant interest at 70 per cent per annum. This would rarely be the case, although there are many people whose optimism about their products exceeds their true potential profitability.

**39.2****F. Jack: Cash Budget**

	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
Balance b/d	3,600	12,309		11,343	16,731	42,822
Overdraft b/d			(1,410)			
Receipts	57,600	52,200	72,000	54,000	70,500*	72,000
	<u>61,200</u>	<u>64,509</u>	<u>70,590</u>	<u>65,343</u>	<u>87,231</u>	<u>114,822</u>
Payments (see schedule)	48,891	65,919	59,247	48,612	44,409	37,965
Balance c/d	12,309		11,343	16,731	42,822	76,857
Overdraft c/d		(1,410)				

\*Includes £7,500 legacy

**Payments schedule**

	<i>July</i>	<i>Aug</i>	
Raw materials	1,050 (Jul) × £13.5	14,175	1,110 (Aug) × £13.5
	960 (Jun) × £1.5	1,440	1,050 (July) × £1.5
Direct labour	1,050 × £24	25,200	1,110 × £24
Variable 960 × £3.6 + 1.050 × £2.40	5,976	1,050 × £3.6 + 1,110 × £2.40	
Fixed expenses	1,200		6,444
Drawings	900		1,200
	<u>48,891</u>	<u>900</u>	<u>65,919</u>

*Sept*

Raw materials	1,140 (Sept) × £13.5	15,390	1,020 (Oct) × £13.5
	1,110 (Aug) × £1.5	1,665	1,140 (Sep) × £1.5
Direct labour	1,140 × £24	27,360	1,020 × £24
Variable 1,110 × £3.6 + 1,140 × £2.4	6,732	1,140 × £3.6 + 1,020 × £2.4	
Fixed expenses	1,200		6,552
Drawings	900		1,200
Machinery	6,000		900
	<u>59,247</u>	<u>6,000</u>	<u>48,612</u>

*Nov*

Raw materials	930 (Nov) × £13.5	12,555	780 (Dec) × £13.5
	1,020 (Oct) × £1.5	1,530	930 (Nov) × £1.5
Direct labour	930 × £24	22,320	780 × £24
Variable 1,020 × £3.6 + 930 × £2.4	5,904	930 × £3.6 + 780 × £2.4	
Fixed expenses	1,200		5,220
Drawings	900		1,200
	<u>44,409</u>	<u>900</u>	<u>37,965</u>

**39.3****(a)****Cash Budget**

	<i>July</i>	<i>Aug</i>	<i>Sept</i>
<i>Receipts</i>			
Cash sales (W1)	9,600	4,800	7,200
Credit sales (W2)	17,640	14,112	7,056
	<u>27,240</u>	<u>18,912</u>	<u>14,256</u>
<i>Payments</i>			
Purchases	3,600	5,400	8,100
Direct labour	1,600	2,400	3,600
Direct production expenses	4,800	2,400	3,600
Variable selling expenses	4,000	3,200	1,600
Fixed expenses	1,820	1,820	1,820
	<u>15,820</u>	<u>15,220</u>	<u>18,720</u>
Balance start of month	3,900	15,320	19,012
Balance at end of month	15,320	19,012	14,548

(W1) July 800 × 40% × £30 = 9,600

August 400 × 40% × £30 = 4,800

September 600 × 40% × £30 = 7,200

(W2) July 1,000 × 60% × £30 = 18,000 – 2% = 17,640

August 800 × 60% × £30 = 14,400 – 2% = 14,112

September 400 × 60% × £30 = 7,200 – 2% = 7,056

(b) (i) Can forecast when and if money needs to be borrowed.

(ii) Can forecast when surplus funds are available so that they can be invested elsewhere.

(iii) To use as basis when dealing with supplier as to creditworthiness or bank for borrowing purposes.

**39.5***Receipts*

	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>
Sales this month 20%		9,000	9,000	9,000
Sales last month 70%		31,500	31,500	31,500
Sales 2 months ago 10%			4,000	4,500
Other receipts from d/s	40,000			
	<u>40,000</u>	<u>41,000</u>	<u>44,500</u>	<u>45,000</u>

*Payments*

Wages	2,000	2,000	2,000	2,000
Bank loan and interest	242	242	242	242
Drawings	500	500	500	500
Purchases	34,000	38,250	38,250	45,750
PAYE tax	500	500	500	500
Rent	1,250			1,250
Rates				2,250
Value added tax	5,000			3,950
Motor van		8,150		
	<u>43,492</u>	<u>49,642</u>	<u>41,492</u>	<u>56,442</u>

*Current account balances*

Start of month	5,000	1,508	(7,134)	(4,126)
End of month	1,508	(7,134)	(4,126)	(15,568)

### 39.6

(a) In brief:

Current ratio of 210,000 : 150,000 = 1.4 : 1  
 Acid test ratio not known. Very dangerous situation because if bank manager asks for repayment of overdraft it is unlikely it can be repaid in the short term.

Profits get ploughed back into the company in all sorts of ways, e.g. extra fixed assets, more stock. It has no direct connection with the balance at the bank. (Use cash flow statements as an illustration.)

<i>Cash Budget</i>				
	<i>Apr</i>	<i>May</i>	<i>June</i>	<i>July</i>
<i>Receipts</i>				
Cash sales	40,000	40,000	40,000	40,000
Credit sales	65,000	70,000	70,000	70,000
	<u>105,000</u>	<u>110,000</u>	<u>110,000</u>	<u>110,000</u>
<i>Payments</i>				
Purchases	60,000	58,000	61,000	55,000
Selling and administration	5,700	6,600	6,600	6,600
Administration charges	10,000	10,000	10,000	13,500
Final dividend 20X9/X0		7,500		
Interim dividend 20X0/X1	<u>75,700</u>	<u>82,100</u>	<u>77,600</u>	<u>4,000</u>
	(150,000)	(120,700)	(92,800)	(60,400)
Balance overdraft start of month				(29,500)
Balance overdraft end of month		( 92,800)	(60,400)	

(c) Could seem to be proceeding satisfactorily to eliminate overdraft.

- Could be further reduced by:
- (i) Issuing new shares
  - (ii) Getting debtors to pay more quickly
  - (iii) Delaying payment of creditors
  - (iv) Selling off fixed assets
  - (v) Issuing debentures.

### 40.1

<i>Stock Budget 20X7</i>				
	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>
Opening stock	5,000*	7,000	8,000	7,000
Add Purchases	(A) 20,000	23,500	21,500	31,000
	(B) 20,000	30,500	29,500	38,000
Less Cost of sales	(C) 25,000	18,000	22,500	27,000
Closing stock	(D) 7,000	8,000	7,000	11,000

\* After special sale of £8,000 goods at cost.

To work out missing figures:

August (A) is known. (D) is 24,000 – 25%

Therefore, as stockturnover is 3,  $\frac{(D) 18,000}{[(A) 5,000 + (E) \text{ question}] \div 2} = 3$

Therefore bottom line is 6,000 so (E) must be 7,000.  
 Repeat following months.

(b) *Cash Budget 20X7*

	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>
<i>Receipts:</i>				
Capital	10,000			
Soul's debtors	20,250			
Debtors	–	–	24,000	30,000
Special sale	<u>8,000</u>	<u>–</u>	<u>24,000</u>	<u>30,000</u>
	<u>38,250</u>	<u>–</u>	<u>24,000</u>	<u>30,000</u>
<i>Payments:</i>				
Creditors	10,000	20,000	23,500	21,500
General expenses	<u>700</u>	<u>700</u>	<u>700</u>	<u>700</u>
	<u>10,700</u>	<u>20,700</u>	<u>24,200</u>	<u>22,200</u>
Bank: Opening	(20,000)	7,550	(13,150)	(13,350)
Closing	<u>7,550</u>	<u>(13,150)</u>	<u>(13,350)</u>	<u>(5,550)</u>

### 40.3

	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
<i>Cash Budget</i>						
Opening balance	30,000	(36,460)	(27,770)	(17,680)	(2,810)	18,000
Opening overdraft						
Received (see schedule)	7,200	10,800	16,400	21,600	28,800	34,400
	<u>37,200</u>	<u>(25,660)</u>	<u>(11,370)</u>	<u>3,920</u>	<u>25,990</u>	<u>52,400</u>
Payments (see schedule)	73,660	2,110	6,310	6,730	7,990	9,460
Closing balance	(36,460)	(27,770)	(17,680)	(2,810)	18,000	42,940

*Cash Receipts Schedule*

	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
Cash sales	7,200	10,800	14,400	18,000	23,400	25,200
Credit sales	–	–	–	3,600	5,400	7,200
Rent received	<u>7,200</u>	<u>10,800</u>	<u>2,000</u>	<u>21,600</u>	<u>28,800</u>	<u>2,000</u>
	<u>7,200</u>	<u>10,800</u>	<u>16,400</u>	<u>21,600</u>	<u>28,800</u>	<u>34,400</u>

*Cash Payments Schedule*

	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
Drawings	1,400	1,400	1,400	1,400	1,400	1,400
Premises	60,000					
Shop fixtures	4,000					
Motor van	8,000					
Salaries of assistants	260	260	260	260	260	260
Payments to creditors			4,200	4,620	5,880	7,350
Other expenses	<u>73,660</u>	<u>450</u>	<u>450</u>	<u>450</u>	<u>450</u>	<u>450</u>
	<u>73,660</u>	<u>2,110</u>	<u>6,310</u>	<u>6,730</u>	<u>7,990</u>	<u>9,460</u>

**40.3 (cont'd)****F Taim****Forecast Trading and Profit and Loss Account for the six months ended 31 December 20X2**

Sales	148,500
Less Cost of goods sold:	
Purchases	39,570
Less Closing stock ( $390 \times £8$ )	<u>3,120</u>
Gross profit	112,050
Add Rent received	<u>4,000</u>
	116,050
Less Expenses:	
Assistants' salaries	1,560
Other expenses	2,700
Depreciation: Premises	1,500
Shop fixtures	300
Motor van	<u>1,000</u>
Net profit	<u>7,060</u>
	<u>108,990</u>

**Balance Sheet as at 31 December 20X2**

	Cost	Depn	NBV
<b>Fixed assets</b>			
Premises	60,000	1,500	58,500
Shop fixtures	4,000	300	3,700
Motor van	<u>8,000</u>	<u>1,000</u>	<u>7,000</u>
	72,000	<u>2,800</u>	69,200
<b>Current assets</b>			
Stock		3,120	
Debtors		33,300	
Bank		<u>42,940</u>	
Less Current liabilities		79,360	
Creditors	17,520		
Other expenses owing	<u>450</u>		
		<u>17,970</u>	

**Working capital**

Stock	61,390
Trade debtors	<u>130,590</u>
	<u>191,980</u>

**Financed by:**

Capital	30,000
Cash introduced	<u>108,990</u>
Add Net profit	138,990
	<u>8,400</u>
Less Drawings	<u>130,590</u>

**40.6****Issa Ltd****Trading and Profit and Loss Account for the year ended 31 December 20X1**

Sales	£000
Less Cost of goods sold	900.0
Opening stock	80.0
Purchases (difference)	<u>570.0</u>
	650.0
Less Closing stock	<u>65.0</u>
Gross profit	585.0
Less Expenses	<u>315.0</u>
Administration expenses	63.6
Selling and distribution expenses (54 + 15)	69.0
Financial charges	20.8
Provision for doubtful debts	2.5
Depreciation	<u>60.0</u>
Net profit	<u>215.9</u>
Profit on sale of land and buildings	99.1
Retained earnings from last year	150.0
	<u>350.0</u>
Less Appropriations	<u>599.1</u>
Bonus share issue	50.0
Preference share dividends	9.0
Ordinary dividend	<u>7.5</u>
Retained earnings carried to next year	66.5
	<u>532.6</u>

**(b) Balance Sheet as at 31 December 20X1**

Fixed assets at cost ( $750 - 50$ )	£000
Less Depreciation to date	£000
Investment in Yates Ltd at cost	700.0
	<u>204.0</u>
	496.0
<b>Current assets</b>	100.0
Stock	65.0
Trade debtors	100.0
Less Provision	<u>7.5</u>
Bank	92.5
	350.1
	<u>507.6</u>

**Less Current liabilities**

Trade creditors	56.0
Expense creditors	<u>15.0</u>
	71.0
	<u>436.6</u>
	<u>1,032.6</u>

**Financed by:**

Ordinary share capital ( $200 + 100$ )	300.0
Share premium ( $150 - 50$ )	100.0
9% Preference shares	100.0
Retained earnings	<u>532.6</u>
	<u>1,032.6</u>

(c) Advantages:

(i) Business can establish desired profit in advance. It can then take necessary action to try to achieve it.

Desired ROCE can be set as target.

Also helps in forecasting dividends/planning for taxation purposes/organising necessary finance/for use with financial backers.

(ii) Manage working capital to ensure its sufficiency when needed.

Manage cash balances to seek overdrafts/loans from bank when needed. Ensure creditors paid on time to gain discounts. Invest surpluses as and when they may occur.

#### 40.7 Cash Payments Schedule

	Jul	Aug	Sept	Oct	Nov	Dec
Direct materials	300	240	1,100	1,000	800	700
Direct labour	2,700	2,700	2,700	2,700	2,700	2,700
Variable indirect manufacturing expenses	1,050	1,800	1,800	1,800	1,800	1,800
Fixed indirect manufacturing expenses	450	450	450	450	450	450
Machine	2,500					
Motor vehicle	7,000	5,190	10,000	5,950	5,750	5,650

#### Cash Receipts Schedule

Debtors	25,000
Receipts from debtors	10,000
	10,000

#### (a) Cash Budget (£)

Opening balance	35,500
Add Receipts	9,500
	45,000
Less Payments	7,000
Closing balance	38,000

#### (b) Debtors Budget (£)

Opening balance	9,500
Add Sales	6,000
	15,500
Less Receipts	9,500
Closing balance	6,000

#### (c) Creditors Budget (£)

Opening balance	540
Add Purchases	1,100
	1,640
Less Payments	300
Closing balance	1,340

## Answers to review questions

#### (d) Raw Materials Budget (£)

Opening stock	1,500	1,700	1,800	1,700	1,500	1,300
Add Purchases	1,100	1,000	800	700	700	900
	2,600	2,700	2,600	2,400	2,200	2,200
Less Used in production	900	900	900	900	900	900
Closing stock	1,700	1,800	1,700	1,500	1,300	1,300

Pies and Cakes Ltd

#### (e) Forecast Operating Statement for the six months ending 31 December 20X8

Sales	51,300
Less Cost of goods sold	
Opening stock finished goods	6,840
Add Cost of goods completed (£12 × 2,700)	32,400
	39,240
Less Closing stock finished goods (£12 × 770)	9,240
Gross profit	30,000
Less Expenses	
Fixed indirect manufacturing expenses	2,700
Depreciation: Buildings	15,000
Plant and machinery	5,000
Motor vehicles	4,000
Office fixtures	220
	24,200
Net loss	26,920
	(5,620)

#### (f) Forecast Balance Sheet as at 31 December 20X8

<b>Fixed Assets</b>		
Tangible Assets	Cost	Acc Depru
Buildings	300,000	135,000
Plant and machinery	52,500	17,500
Motor vehicles	40,000	18,000
Office fixtures	2,500	1,320
	395,000	189,320
<b>Current Assets</b>		
Stock: Finished goods	9,240	
Raw materials	1,300	
Debtors	7,350	
Cash and bank		68,360
		86,250

Creditors: amounts falling due within one year

Creditors for raw materials

Creditor for variable indirect manufacturing

overheads

Total assets less current liabilities

Creditors: amounts falling due after more than 1 year

Debtors

Capital and reserves

Called-up share capital

Profit and loss (44,150 – 5,620)

25,000
263,530
225,000
38,530
263,530



**40.8****A (a) Debtor budget**

	July	Aug	Sept	Oct
Balances from last month	52,250	52,250	49,500	51,750
Add Credit sales	24,750	24,750	27,000	33,000
	<u>77,000</u>	<u>77,000</u>	<u>76,500</u>	<u>84,750</u>
Less Paid by debtors	24,750	27,500	24,750	24,750
Balances at end of month	<u>52,250</u>	<u>49,500</u>	<u>51,750</u>	<u>60,000</u>

Note: sales are July 900, Aug 900, Sept 900, Oct 1,100. October is taken to be June figure + 10%.

**(b) Raw material budget (in kg)**

	July	Aug	Sept	Oct
Stock from last month	1,800	1,800	1,800	2,200
Add purchases	1,800	1,800	2,200	2,200
	<u>3,600</u>	<u>3,600</u>	<u>4,000</u>	<u>4,400</u>
Less Used	1,800	1,800	1,800	2,200
Stock at end of month	<u>1,800</u>	<u>1,800</u>	<u>2,200</u>	<u>2,200</u>

B See text, Section 40.8

$$EOQ = \sqrt{\frac{2 \times 12,000 \times \text{£}10}{\text{£}6}} = 200 \text{ units}$$

- (i) Based on estimates which obviously can vary a lot from actual.  
(ii) Consumption may be uneven at times; EOQ assumes even usage.  
(iii) Such things as strikes, catastrophes, etc. can render it useless.

**40.9****A Workings:**

- 1 Raw materials  $294,400 \div 64,000 = 4.6$  per unit
- 2 Direct labour  $236,800 \div 64,000 = 3.7$  per unit
- 3 Power  $38,400 \div 64,000 = 0.60$  per unit
- 4 Repairs are  $51,200 - 25\% \times (12,800) = 38,400$  fixed. Variable  $12,800 \div 64,000 = 0.20$
- 5 Indirect wages  $64,000 - 15\% \times (9,600) = 54,400$  fixed.  
Variable  $9,600 \div 64,000 = 0.15$ .

**Bedford Ltd****Flexible Budget at Varying Levels of Production**

Units	Level of Production				Actual	Variance
	60%	70%	75%	90%		
Variable costs (£)	48,000	56,000	60,000	72,000	68,000	+ (-)
Raw materials	220,800	257,600	276,000	331,200	312,800	310,750
Direct labour	177,600	207,200	222,000	266,400	251,600	249,100
Power	28,800	33,600	36,000	43,200	40,800	39,800
Repairs and						
Maintenance	9,600	11,200	12,000	14,400	13,600	14,650
Indirect wages	7,200	8,400	9,000	10,800	10,200	10,850
	<u>444,000</u>	<u>518,000</u>	<u>555,000</u>	<u>666,000</u>	<u>629,000</u>	<u>625,150</u>

**Fixed costs**

Repairs and	38,400	38,400	38,400	38,400	38,400	38,400	—
Maintenance	1,300	1,300	1,300	1,300	1,300	1,350	(50)
Insurance	1,250	1,250	1,250	1,250	1,250	1,200	50
Heating/lighting	54,400	54,400	54,400	54,400	54,400	54,400	—
Indirect wages	<u>95,350</u>	<u>95,350</u>	<u>95,350</u>	<u>95,350</u>	<u>95,350</u>	<u>95,350</u>	<u>—</u>
Total costs	<u>539,350</u>	<u>613,350</u>	<u>650,350</u>	<u>761,350</u>	<u>724,350</u>	<u>720,500</u>	<u>3,850</u>

Briefly: generally efficient as most variances are favourable. Comment in detail on each variance.

B See text.

**41.1****(a) Standard cost per unit**

	X	Y	Z
Material 1		1.8	2.4
Material 2	0.6	2.1	
Material 3	3.0	2.5	1.5
Material 4	0.4		0.9
Labour: Dept A	4.0	6.4	4.8
Dept B	<u>4.0</u>	<u>2.4</u>	<u>4.8</u>
Production cost	<u>3.0</u>	<u>1.8</u>	<u>8.4</u>
Overheads	<u>11.0</u>	<u>10.6</u>	<u>13.2</u>
Production (1.8 per hour)	<u>9.0</u>	<u>5.4</u>	<u>10.8</u>
Administration (50%)	<u>20.0</u>	<u>16.0</u>	<u>24.0</u>
Selling	<u>10.0</u>	<u>8.0</u>	<u>12.0</u>
Standard cost	<u>35.0</u>	<u>4.0</u>	<u>6.0</u>
Profit (1/7 of standard cost)	<u>5.0</u>	<u>4.0</u>	<u>6.0</u>
Standard selling price	<u>40.0</u>	<u>32.0</u>	<u>48.0</u>

**(b) Sales budget in units**

Budgeted at std price	X	Y	Z
	<u>800,000</u>	<u>1,280,000</u>	<u>2,400,000</u>
Unit selling price	40.0	32.0	48.0
Sales budget in units	<u>20,000</u>	<u>40,000</u>	<u>50,000</u>
(c) Production budget in units	X	Y	Z
Needed for sales	20,000	40,000	50,000
For stock purposes	<u>5,000</u>	<u>10,000</u>	<u>10,000</u>
To produce	<u>25,000</u>	<u>50,000</u>	<u>60,000</u>

**(d) Direct materials purchases budget**

Materials	1		4
Product X	—	3	480,000
Product Y (kg)	100,000	300,000	500,000
Product Z	700,000	360,000	1,080,000
	<u>900,000</u>	<u>360,000</u>	<u>1,560,000</u>
	<u>1,440,000</u>	<u>1,160,000</u>	<u>1,560,000</u>
	<u>2,340,000</u>	<u>800,000</u>	<u>£290,000</u>
Cost (£)	<u>£234,000</u>	<u>£120,000</u>	<u>£78,000</u>

**42.1**

(i) Net variance:	Actual cost per unit $35 \times £9$ Standard cost per unit $30 \times £10$ Net variance (adverse)	<u>15</u> 315 300
Made up of:	Favourable price variance $£1 \times 30$ Adverse usage variance $5 \times £9$ Net variance (adverse)	<u>15</u> 30 45
(ii) Net variance:	Actual cost per unit $54 \times £16$ Standard cost per unit $60 \times £15$ Net variance (favourable)	<u>36</u> 864 900
Made up of:	Favourable usage variance $6 \times £15$ Adverse price variance $54 \times £1$ Net variance (favourable)	<u>36</u> 90 54
(iii) Total variance:	Actual cost per unit $38 \times £28$ Standard cost per unit $30 \times £24$ Variance (adverse)	<u>344</u> 1,064 720
Made up of:	Adverse price variance $30 \times £4$ (+ £32 common) Adverse usage variance $8 \times £24$ Total variance (adverse)	<u>344</u> 152 192
(iv) Total variance:	Actual cost per unit $28 \times £18$ Standard cost per unit $31 \times £20$ Total variance (favourable)	<u>116</u> 504 620
Made up of:	Favourable price variance $28 \times £2$ Favourable usage var. $3 \times £18$ (+ £6 common)	<u>116</u> 56 60
(v) Total variance:	Actual cost per unit $310 \times £5$ Standard cost per unit $280 \times £4$ Total variance (adverse)	<u>430</u> 1,550 1,120
Made up of:	Adverse price var. $280 \times £1$ (+ £30 common) Adverse usage variance $30 \times £4$	<u>430</u> 310 120
(vi) Total variance:	Actual cost per unit $4,950 \times £66$ Standard cost per unit $5,000 \times £75$ Total variance (favourable)	<u>48,300</u> 326,700 375,000
Made up of:	Favourable price variance $£9 \times 4,950$ Favourable usage variance $50 \times £66$ (+ £450 common)	<u>48,300</u> 44,550 3,750

**42.3**

(i)	Actual cost per unit Standard cost per unit Favourable labour efficiency variance	<u>48</u> 2,592 2,640
(ii)	Actual cost per unit Standard cost per unit Adverse wage rate variance	<u>46</u> 1,334 1,288
(iii)	Actual cost per unit Standard cost per unit Adverse labour efficiency variance	<u>456</u> 2,736 2,280
(iv)	Actual cost per unit Standard cost per unit Favourable labour efficiency variance	<u>518</u> 1,442 1,960
(v)	Actual cost per unit Standard cost per unit Favourable wage rate variance	<u>81.6</u> 6,936 775.2
(vi)	Actual cost per unit Standard cost per unit Adverse labour efficiency variance	<u>44.8</u> 380.8 336.0
(vii)	Actual cost per unit Standard cost per unit Adverse labour efficiency variance	<u>77</u> 847 770
(viii)	Actual cost per unit Standard cost per unit Adverse wage rate variance	<u>60</u> 1,220 1,160

**42.5**

(a) See text.	
(b) Standard hours produced in March	
Dishwashers $150 \times 10$	1,500
Washing machines $100 \times 12$	1,200
Refrigerators $90 \times 14$	1,260
Total standard hours	<u>3,960</u>
(c) (i) Standard hours $\times$ Standard hourly rate	
$3,960 \times £4$	15,840
Actual wages	18,450
Total direct labour variance	<u>2,610 (Adverse)</u>
(ii) Standard pay $4,100 \times £4$	16,400
Actual pay	18,450
Direct labour rate variance	<u>2,050 (Adverse)</u>
(iii) Direct labour efficiency variance	
Standard hours – Actual hours $\times$ Standard rate	
$3,960 - 4,100 \times £4 = 560$ (Adverse)	

**42.5 (cont'd)**

(d) Labour rate variance:

- 1 Higher grade labour used than necessary.
- 2 Job running behind time so extra people brought in to help.

Direct labour efficiency variance:

- 1 Using unsuitable machinery.
- 2 Workers slowing up work so as to get overtime rates paid.

**42.7**(a) *Profit Statement for the month of July 20X1*

	Budgeted	Actual
Sales	1,000,000	1,071,200
<i>Less Manufacturing costs</i>		
Direct materials	200,000	201,285
Direct labour	313,625	337,500
Variable overheads	141,400	143,000
Fixed overheads	75,000	71,000
Gross profit	730,025	752,785
	269,975	318,415
<i>Less Variable sales o/h</i>	64,400	69,500
Admin. costs	150,000	148,650
	55,575	218,150
		100,265

(b) (i) Materials price variance

$$= (\text{Standard price} - \text{Actual price per unit}) \times \text{Quantity purchased}$$

$$= 10.00 - 10.65 = 0.65 \times 18,900 = 12,285 \text{ Adverse}$$

$$\begin{aligned} \text{Material usage} &= (\text{Standard quantity} - \text{Actual quantity used}) \times \text{Standard price} \\ &= (20,000 - 18,900) \times 10 = 11,000 \text{ Favourable} \end{aligned}$$

*Summary:*

Materials price variance	12,285	(A)
Materials usage variance	11,000	(F)
Materials cost variance	<u>1,285</u>	<u>(A)</u>

(ii) Labour rate variance

$$\begin{aligned} &= (\text{Standard rate per hour} - \text{Actual wage rate}) \times \text{Actual hours worked} \\ &= (6.50 - 6.75) \times 50,000 = 12,500 \text{ (A)} \end{aligned}$$

Labour efficiency variance

$$\begin{aligned} &= (\text{Standard labour hours} - \text{Actual hours}) \times \text{Standard rate per hour} \\ &= (48,250 - 50,000) \times 6.50 = 11,375 \text{ (A)} \end{aligned}$$

*Summary:*

Labour rate variance	12,500	(A)
Labour efficiency variance	11,375	(A)
Labour cost variance	<u>23,875</u>	<u>(A)</u>

- (c) In each case find out why the variance has occurred. Then it must be established whether the variances were outside the control of anyone in the firm or whether they were caused by the actions, or lack of action, by people in the organisation. Any necessary corrective action can then be taken.

**43.1**

(a) Actual overhead

$$\begin{aligned} &\text{Overhead applied to production} \times \text{£6} \\ &\text{Favourable variable overhead expenditure variance} \end{aligned}$$

(b) Actual overhead

$$\begin{aligned} &\text{Overhead applied to production } 12,000 \times \text{£5} \\ &\text{Adverse variable overhead expenditure variance} \end{aligned}$$

(c) Actual fixed overhead

$$\begin{aligned} &\text{Budgeted fixed overhead} \\ &\text{Favourable fixed overhead expenditure variance} \end{aligned}$$

(d) Actual fixed overhead

$$\begin{aligned} &\text{Budgeted fixed overhead} \\ &\text{Adverse fixed overhead expenditure variance} \end{aligned}$$

(e) Actual hours  $\times$  Standard rate (18,100  $\times$  £4)

$$\begin{aligned} &\text{Budgeted hours} \times \text{Standard rate } (19,000 \times \text{£4}) \\ &\text{Favourable variable overhead efficiency variance} \end{aligned}$$

(f) Actual hours  $\times$  Standard rate (26,000  $\times$  £6)

$$\begin{aligned} &\text{Budgeted hours } (11,320 \times 2 = 22,640), \text{ Standard rate } (22,640 \times \text{£6}) \\ &\text{Adverse variable overhead efficiency variance} \end{aligned}$$

**43.3**

The standard variable overhead rate is:

$$\frac{\text{£120,000}}{60,000} = \text{£2 per direct labour hour and £2.4 per unit}$$

The standard fixed overhead rate is:

$$\frac{\text{£48,000}}{60,000} = \text{£0.8 per direct labour hour and £0.96 per unit}$$

The variances are:

*Variable overhead*(i) *Expenditure variance*

Actual overhead

$$\begin{aligned} &\text{Overhead applied to production } 59,000 \times \text{£2} \\ &\text{Adverse expenditure variance} \end{aligned}$$

(ii) *Efficiency variance*

$$\begin{aligned} &\text{Actual hours} \times \text{standard rate } 59,000 \times \text{£2} \\ &\text{Budgeted hours} \times \text{standard rate } (52,000 \text{ units which} \\ &\quad \text{should be produced in } 52,000 \times 1.2 \text{ hours} = 62,400 \text{ hours} \times \text{£2} \end{aligned}$$

$$\begin{aligned} &\text{Favourable efficiency variance} \\ &\text{Favourable fixed overhead efficiency variance} \end{aligned}$$

*Fixed overhead*(i) *Efficiency variance*

$$\begin{aligned} &\text{Actual units produced} \times \text{Std rate } 52,000 \times 1.2 \text{ hrs per unit} \times \text{£0.8} \\ &\text{Actual Labour hours} \times \text{Standard rate } 59,000 \times \text{£0.8} \end{aligned}$$

$$\begin{aligned} &\text{Favourable fixed overhead efficiency variance} \end{aligned}$$

	Actual units in budget (%)	Actual units sold	Variance in units	Budget gross profit per unit £	Total variance £
A	900	1,224	+324	2.00	+648
B	1,800	2,160	+360	2.50	+900
C	900	216	-684	2.20	-1,504.80
	<u>3,600</u>	<u>3,600</u>	<u>—</u>		<u>+43.2</u>

<i>Summary of sales variance</i>	8,935.2
Price variance favourable	920.0
Volume variance adverse	43.2
Mix variance favourable	<u>8,058.4</u>
Net favourable variance	

#### 43.9

(a) See text, Section 42.1.

(b)

Singleton Ltd

(i) *Manufacturing Account for the year ended 31 August 20X9*

	Actual £	Budget £	Variance £
Raw material consumed	90,000	80,000	(10,000)
Direct labour wages	115,600	120,000	4,400
Direct expenses	<u>6,000</u>	<u>5,800</u>	<u>(200)</u>
Prime cost	211,600	205,800	(5,800)
<i>Factory overhead expenses:</i>			
Factory rent	10,000	10,000	—
Factory maintenance	6,100	6,700	600
Heating and lighting	3,900	2,900	(1,000)
Depreciation	10,500	8,900	(1,600)
Wages, maintenance labour	24,000	18,000	(6,000)
Other factory overhead	<u>10,000</u>	<u>12,700</u>	<u>2,700</u>
Production cost of goods completed	<u>276,100</u>	<u>265,000</u>	<u>(11,100)</u>

(ii) *Trading Account for the year ended 31 August 20X9*

	£
Sales	405,000
Stock of finished goods 1 Sep X8	28,900
Production cost	<u>276,100</u>
	<u>305,000</u>
Less Stock of fin. goods 31 Aug X9	<u>35,000</u>
Gross profit	<u>270,000</u>
Cost of sales	<u>135,000</u>

(c) See text.

(ii) <i>Expenditure variance</i>	46,000
Actual fixed overhead	48,000
Budgeted fixed overhead	<u>2,000</u>
Favourable fixed overhead expenditure variance	
(iii) <i>Capacity variance</i>	47,200
Actual hours × Standard rate 59,000 × £0.8	48,000
Budgeted hours × Standard rate 60,000 × £0.8	<u>800</u>
Adverse fixed overhead capacity variance	<u>3,920</u>

The variances can be explained further:

#### *Variable overhead*

Actual overhead	128,000
Budgeted overhead for actual production 52,000 units × £2.4	124,800
Net adverse variance (made up of favourable efficiency variance £6,800 less adverse expenditure variance 10,000)	<u>3,200</u>

#### *Fixed overhead*

Actual overhead	46,000
Overhead based on units of production 52,000 × £0.96	49,920
Net favourable variance (made up of favourable efficiency variance £2,720 plus favourable expenditure variance £2,000 less adverse capacity variance £800)	<u>3,920</u>

#### 43.5

Actual units sold 168,000 × Budget price £2.50 =	£ 420,000
168,000 × Actual price £2.40 =	403,200
Adverse price variance	<u>16,800</u>

Actual units sold 168,000 × Budget gross profit £0.30 =	£ 50,400
Budgets units sold 140,000 × Budget gross profit £0.30 =	42,000
Favourable volume variance	<u>8,400</u>

#### 43.7

	Actual units sold	Budget price £	Actual price £	Unit price variance £	Total price variance £
A	1,224	6	8.20	+2.20	+2,692.8
B	2,160	9	11.60	+2.60	+5,616.0
C	216	8	10.90	+2.90	+626.4
	<u>3,600</u>		<u>Total price variance</u>		<u>+8,935.2</u>

	Actual units sold	Actual units in budget (%)	Budget sales	Variance in units	Budget gross profit per unit £	Total variance £
A	1,224	900	1,000	-100	2.00	-200
B	2,160	1,800	2,000	-200	2.50	-500
C	216	900	1,000	-100	2.20	-220
	<u>3,600</u>	<u>3,600</u>	<u>4,000</u>	<u>-400</u>		<u>-920</u>

### Note to exercises on break-even analysis:

The general idea of the questions is to get you to draw up the schedules of costs and revenues and then to draw them carefully on graph paper. It will be a waste of time if you do not use graph paper. It illustrates that accounting data can be represented in diagram form for some users in a more effective way than just using figures. It also puts over the idea that businesses exist to make a profit, and that until sufficient volume is achieved then the business will incur losses. The impact of fixed costs on firms can be revealed quite sharply by this sort of analysis.

#### 44.1

(i) No. of units	Fixed cost	Variable cost	Total cost	Revenue	Profit	Loss
0	8,000	—	8,000	—	—	8,000
1,000	8,000	4,000	12,000	6,000		6,000
2,000	8,000	8,000	16,000	12,000		4,000
3,000	8,000	12,000	20,000	18,000		2,000
4,000	8,000	16,000	24,000	24,000	nil	
5,000	8,000	20,000	28,000	30,000	2,000	
6,000	8,000	24,000	32,000	36,000	4,000	
7,000	8,000	28,000	36,000	42,000	6,000	
8,000	8,000	32,000	40,000	48,000	8,000	
9,000	8,000	36,000	44,000	54,000	10,000	
10,000	8,000	40,000	48,000	60,000	12,000	

(ii) Similar in style to Exhibit 44.2 in the chapter.

#### 44.2

- (a) (i) £24,000 (ii) £36,000 (iii) £44,000 (iv) £30,000  
 (b) (i) £18,000 (ii) £48,000 (iii) £33,000.

#### 44.4

- (i) Loss £2,000 (ii) Profit £12,000 (iii) Nil (iv) Profit £6,000 (v) Profit £9,000.

#### 44.6

- (a)  
 (i)  $\text{Break-even point} = \frac{\text{Total fixed costs}}{\text{Selling price per unit} - \text{Variable cost per unit}}$

$$\begin{aligned}\text{For 20X1} &= \frac{250,000}{130 - 110} = 12,500 \text{ units} \\ &= \text{sales of } 12,500 \text{ units} \times £130 = £1,625,000 \text{ sales}\end{aligned}$$

$$\begin{aligned}\text{For 20X2} &= \frac{275,000}{129 - 118.5} = \text{sales of } 26,190 \text{ units} \times £129 \\ &= £3,378,510 \text{ sales}\end{aligned}$$

$$\text{For 20X3} = \frac{275,000}{128.5 - 122} = \text{sales of } 42,308 \text{ units} \times £128.5 = £5,436,578 \text{ sales}$$

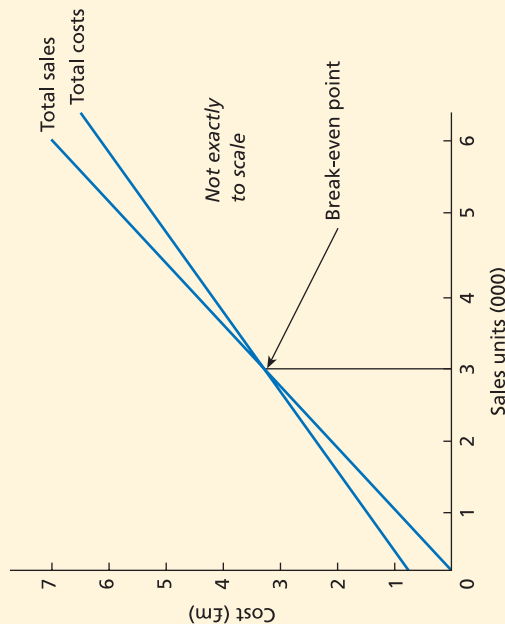
## Appendix 2

### (ii) Polemic Ltd

Actual & Forecast Profit & Loss Accounts for years to 30 September (£000)

	Actual 20X1	Forecast 20X2	Forecast 20X3
Sales	6,500	6,708	6,810.5
Direct materials	2,500	2,860	2,915
Direct labour	1,500	1,638	1,749
Variable production	500	572	636
Direct expenses	250	260	318
Variable sales overhead	750	832	848
Contribution	1,000	546	344.5
Fixed costs			
Production	50	55	55
Overhead	200	220	220
	<u>250</u>	<u>275</u>	<u>275</u>
	750	271	69.5

(b) Should best be on graph paper. General idea follows:



(c) The management of Polemic should be explaining to the union that their demand is unreasonable. As it is, profits have fallen dramatically and the break-even point in 20X3 will be over three times higher than in 20X1.

It is therefore almost impossible for the company to raise prices still further and maintain their level of sales. To try to do so would almost certainly mean a fall in demand and a shedding of a large part of the workforce.

(d) See text.

#### 44.8

##### A Hampshire plc

###### Profit Statement for first and second quarters

	First quarter	Second quarter
Sales	126,000	143,640
Materials	32,850	39,420
Labour	18,900	22,680
Variable factory o/h	12,600	15,120
Variable selling costs	7,650	9,180
Contribution	72,000	86,400
Fixed costs:	54,000	57,240
Factory overhead	21,375	21,375
Selling and admin.	16,125	16,125
Net profit	37,500	37,500
	16,500	19,740

$$\text{Contribution per unit} = \frac{54,000}{9,000} = 6.00$$

$$\frac{57,240}{10,800} = 5.30$$

B Draw on graph paper. Break-even points are at:

$$\text{First quarter} = \frac{37,500}{14.00 - 8.00} = 6,250 \text{ units}$$

$$\text{Second quarter} = \frac{37,500}{13.30 - 8.00} = 7,075 \text{ units}$$

Margins of safety above these points.

C Profit statements incorporating suggestions:

	(i)	(ii)	(iii)	(iv)	(v)
No. of units sold	11,880	11,556	12,960	10,800	10,800
Sales (W1)	158,004	158,317	155,131	143,640	143,640
Materials	46,926	43,913	47,304	39,420	
Labour	24,948	27,734	27,216	22,680	
Variable factory o/h	16,632	16,178	18,144	15,120	see (W2)
Variable selling o/h	10,098	9,823	11,016	11,340	87,900
Total variable costs	98,604	97,648	103,680	88,560	87,900
Contribution	59,400	60,669	51,451	55,080	55,740
Fixed costs					
Factory	21,375	21,375	21,375	21,375	see (W3)
Sellings, etc.	16,125	16,125	16,125	12,025	35,000
	37,500	37,500	37,500	33,400	35,000
Net profit	21,900	23,169	13,951	21,680	20,740
Redundancy					12,000

Workings:

(W1) Selling price per unit (i) 13.30 (ii) 13.70 (iii) 11.97 (iv) 13.30 (v) 13.30.

(W2) Per accounts of second quarter in A 86,400 + extra costs 5p per component, 30,000 × 0.5p = 1,500. Total 87,900.

(W3) Fixed costs 37,500 – saving 2,500 = 35,000. Assumed that the 20 per cent of the firm's fixed costs would still continue as they would have to be paid anyway. Question not too clear on this point.

D Briefly:

- Would increase profit by 21,900 – 19,740 = 2,160. Seems to be a sensible opportunity which should be considered.
- Apparently increases profit by 23,169 – 19,740 = 3,429. No mention as to what the cost of maintaining the guarantee is likely to be. Until this is known it is impossible to come to a conclusion.
- Fall in profit of 19,740 – 13,951 = 5,789. Should not be considered.
- Increases profit by 21,680 – 19,740 = 1,940. Have to renegotiate terms of employment with sales staff. Worth considering.
- Firm
  - If we stop making components how can we be certain that suppliers will not later raise prices?
  - Would we have to keep larger stocks of components in case of breakdown of supply?
  - Possible that newly established firm has got its prices wrong and will be unable to maintain at this price for long.
  - Effect on morale of other employees. Local community: write generally about effects of unemployment and knock-on effects.

E See text, Section 44.4.

#### 44.10

(a) Magwitch Ltd

Summarised Profit and Loss Account for the year to 31 May 20X1

Sales volume: units	20,000
	£
Sales £1.50 + 10% = 1.65 per unit	33,000
Variable costs (20 – 10) × 0.50 + 10% = 55p per unit	11,000
Contribution	22,000
Fixed costs 0.50 + 10% = 55p per unit	11,000
Profit	11,000
(b) Compeyson plc	
Balance sheet as at 31 May 20X1	
Fixed assets (40 + 160)	200
Current assets (65 + 340 – 24 see W2)	381
Short-term liabilities (26 + 110)	136
Share capital (200 + 60 see W2)	260
Share premium (60 × 0.80)	48
Reserves (190 – 53)	137
	445

**44.10 (cont'd)***Workings:*

(W1) Purchase price  $12 \times 11 =$  132  
 Net assets taken over 71  
 + revalued property 8  
 Goodwill written off to reserves 53

(W2) Method of payment of purchase price  
 Shares  $40 \times 3/2 = 60 \times 1.80$  108  
 Cash (balance) 24 132

(c) Shares  $6,000 \times 3/2 = 9,000$  shares  
 Cash  $6,000/40,000 \times 24,000 = £3,600$

**45.1**

(a)  $£17,000 \times 0.06 \times \frac{64}{365} = £178.85$

(b)  $£4,000 \times 0.12 \times \frac{120}{365} = £157.80$  Discount

therefore amount paid = £3,842.20

**45.3**

The amount borrowed is:

$$\begin{aligned} 4,200 \times 1/4 &= 1,050.00 \\ 3,150 \times 1/4 &= 787.50 \\ 2,100 \times 1/4 &= 525.00 \\ 1,050 \times 1/4 &= 262.50 \\ \text{Equivalent loan for 1 year} &= \underline{2,625.00} \end{aligned}$$

$$r = \frac{600}{2,625} = 0.2286 \text{ or } 22.86\%$$

**45.4**

£5,000 will accumulate to  $£5,000 \times (1 + 0.07)^4 = £6,553.98$   
 $£6,553.98 - £5,000 = £1,553.98$

**45.7**

From Table 4 in Appendix 1, the present value of an annuity of £5,000 p.a. for 12 years at 6% =  $£5,000 \times 8.384 = £41,920$  or:

$$\text{Present value} = £5,000 \times \left[ \frac{1 - \frac{1}{(1 + 0.06)^{12}}}{0.06} \right] = £41,919$$

As the offer of £50,000 exceeds the present value of the rent, you should accept the offer.

**Appendix 2****45.9**

$$\begin{aligned} \text{Paid in per year} &= \frac{\text{Value} \times (r)}{(1 + r)^n - 1} \\ &= \frac{£40,000 \times 0.05}{(1.05)^8 - 1} \\ &= £4,188.87 \text{ per year} \end{aligned}$$

**45.11**

$£8,000 \times$  present value factor of an annuity = £21,000. Therefore, the present value factor =  $21,000/8,000 = 2.625$ , which is 7% according to 3 year row of Table 4 in Appendix 1.

**45.12**

Factor present value of an annuity of £1 for five years at 9% = 3.890  
 $£11,000 \times 3.890 = £42,790$  capital value of the lease.

**46.1**

Equipment purchased	20X4	20X5
Sale of old equipment	20,000	(5,000)
Installation of equipment completed and paid	4,000	
Costs incurred in commissioning equipment	8,000	6,000
Rent on premises up to completion date	12,000	(6 months) 6,000
Training costs		3,000
Working capital		16,000
Net cash outlay	<u>44,000</u>	<u>26,000</u>

**46.2**

Capital cost 20X4	44,000	
20X4 20% WDA	<u>8,800</u>	@ 30% tax £2,640 received 20X5
balance c/d	35,200	
New expenditure	15,000	excluding scrap value and additional working capital
	<u>50,200</u>	
20X5 20% WDA	10,040	@ 30% tax £3,012 received 20X6
balance c/d	<u>40,160</u>	
20X6 20% WDA	8,032	@ 30% tax £2409.60 received 20X7
balance c/d	<u>32,128</u>	
20X7 20% WDA	6,425.6	@ 30% tax £1,927.68 received 20X8
balance c/d	<u>25,702.4</u>	

This will continue over the life of the equipment. In 20X6 the cash received from the sale of old equipment will be taxed at 30 per cent, resulting in a tax outflow of £1,500.

<b>46.9</b>	<i>Period</i>	<i>Amount</i>	<i>Discount factor</i>	<i>Present value</i>	<i>Discount factor</i>	<i>Present value</i>
	0	(15,000)	18%	(15,000)	20%	(15,000)
	1	10,000	1.000	8,470	1.000	8,333
	2	6,000	0.847	4,308	0.833	4,164
	3	3,000	0.718	1,827	0.694	1,737
	4	1,000	0.609	<u>516</u>	0.579	<u>482</u>
			0.516	<u>121</u>	0.482	<u>(284)</u>
				121		
				<u>284</u>		
				<u>405</u>		

28% discount rate gives NPV of

32% discount rate gives negative NPV of

NPV = 6,002 positive

$(a)(t)$	0	1	2	3	4	5
<i>Roadhog BN</i>						
Cash inflow		12,500	15,000	20,000	20,000	20,000
Cash outflow fixed		2,000	2,000	2,200	2,400	2,400
variable		3,000	3,600	4,800	4,800	4,800
Operating cash flow		<u>7,500</u>	<u>9,400</u>	<u>13,000</u>	<u>12,800</u>	<u>12,800</u>
Capital	40,000	<u>7,500</u>	<u>9,400</u>	<u>13,000</u>	<u>12,800</u>	<u>8,000</u>
	40,000	0.909	0.826	0.751	0.683	0.621
	<u>1.00</u>	<u>6,817</u>	<u>7,764</u>	<u>9,763</u>	<u>8,742</u>	<u>12,916</u>
	40,000					
NPV = 6,002 positive						



## 46.24 (cont'd)

	0	1	2	3	4	5
<b>Sprinter</b>						
Cash inflow		12,500	15,000	20,000	20,000	20,000
Cash outflow		1,800	1,800	1,800	2,000	2,200
fixed		4,000	4,800	6,400	6,400	6,400
variable		6,700	8,400	11,800	11,600	11,400
Operating cash flow		45,000	8,400	11,800	11,600	9,000
Capital		45,000	0.909	0.826	0.683	0.621
		1.00	6,090	6,938	7,923	12,668
		45,000	6,090	6,938	7,923	12,668
		NPV = 2,519	negative			
<b>VR</b>						
<b>Rocket</b>						
Cash inflow		12,500	15,000	20,000	20,000	20,000
Cash outflow		1,500	1,500	1,400	1,400	1,400
fixed		3,500	4,200	5,600	5,600	5,600
variable		7,500	9,300	13,000	13,000	13,000
		50,000	9,300	13,000	13,000	14,000
		50,000	7,500	9,300	13,000	27,000
		1.00	0.909	0.826	0.683	0.621
		50,000	6,817	7,682	8,879	16,767
		50,000	6,817	7,682	8,879	16,767
		NPV = 92	negative			

## (ii) To the Directors of Road Wheelers Ltd

The NPV anticipated for the three vehicles is as follows:

BN Roadhog	£6,002	Positive
FX Sprinter	£2,519	Negative
VR Rocket	£ 92	Negative

On the basis of NPV assessment using a discount rate of 10 per cent the BN Roadhog appears to be the best option.

The payback position on the three vehicles is as follows:

BN Roadhog	3 years	9.3 months
FX Sprinter	4 years	3.8 months
VR Rocket	4 years	3.2 months

This indicates that the BX Roadhog recovers the cash outlay faster than the other two options which is in its favour.

Since the capital outlay on the BX Roadhog is also significantly lower than the other options this indicates a lower risk and will enhance the ROC on the balance sheet figures.

The BN Roadhog appears to be the best choice.

(b) The problems in evaluating capital projects are essentially related to the estimates involved in forecasting the revenues and costs associated with the project. In this evaluation the relative performance of the three alternatives may be more reliable than overall estimates of the environment. In some situations important factors in the decision may not be readily quantified especially in areas of new technology where many factors are unknown.

The techniques of evaluating the cash flow data are well understood but care must be taken that an appropriate 'cost of capital' is chosen and that risk is taken into account.

## 46.26

## (a) Revised Operating Budget

<b>Ship A</b>									
Estimated revenue receipts	20X5	20X6	20X7	20X8	20X9				
Extra revenue 10%	5	7	9	11	13				
	0.5	0.7	0.9	1.1	1.3				
	5.5	7.7	9.9	12.1	14.3				
Operating payments	4.0	5.0	6.5	7.5	9.0				
Net cash flow Ship A	1.5	2.7	3.4	4.6	5.3				
<b>Ship B</b>									
Estimated revenue receipts:	20X5	20X6	20X7	20X8	20X9				
Private	2.5	3.5	5.0	6.5	7.5				
Commercial	3.45	4.6	5.85	6.5	7.8				
	5.95	8.1	10.85	13.0	15.3				
Operating payments	4.8	6.0	7.9	9.0	10.8				
Net cash flow Ship B	1.15	2.1	2.95	4.0	4.5				

Factor

<b>(b) Cash flows</b>									
Ship A	Ship B	Factor							
(10.0)	(14.1)	15%							
0	1.5	1.0	(10.0)	1.0	1.0	(14.0)			
20X6	0.870	1.3	1.3	1.15	0.87	1.0			
20X7	2.7	0.756	2.0	2.1	0.756	1.6			
20X8	3.4	0.658	2.2	2.95	0.658	1.9			
20X9	4.6	0.572	2.6	4.0	0.572	2.3			
20X0	5.3	0.497	2.6	4.5	0.497	2.2			
NPV	7.5	0.497	0.7	10.5	0.497	5.0			
Assumed value of ship			3.7			5.2			
on market <sup>1/20</sup> × cost		4.4				0.2			

Note: The calculation has been done with a zero assumption about cash value of ships at the end of year 5 and then with an assumed value equal to the unexplained cost value based on a 20-year life.

(c) The evaluation assumes an interest rate of 15 per cent and evaluates cash flows over the first five years' life of the ships. If the assumption is that at the end of five years the ships will have no value then ship A has a positive NPV of £0.7m while B has a negative NPV of £5.0m. However, it is unlikely that the ships would be valueless at the end of year 5 and if an assumption is made to take 15/20 of the cost as the realisable value then both NPVs become positive at £4.4m and £0.2m respectively.

From this evaluation ship A looks to give a better return. It is worth noting, however, that ship B does have much higher capacity. If operating revenues were to expand more than forecast over the five years and thereafter, this ship might provide much higher returns. This operating forecast and the likely market values of the two vessels should therefore be closely examined.

- 47.1** *See text.*
- 47.2** *See text.*
- 47.3** *See text.*
- 47.4** *See text.*

- 48.1** *See text.*
- 48.2** *See text.*
- 48.3** *See text.*
- 48.4** *See text.*
- 48.5** *See text.*
- 48.6** *See text.*
- 48.7** *See text.*
- 49.1** *See text.*
- 49.2** *See text.*
- 49.3** *See text.*
- 49.4** *See text.*

# Glossary

- Abnormal losses** (Chapter 37): Losses arising in the production process that should have been avoided.
- Absorption costing** (Chapter 36): The method of allocating all indirect manufacturing costs to products. (All fixed costs are allocated to cost units.)
- Activity-based costing** (Chapter 36): The process of using cost drivers as the basis for overhead absorption.
- Adverse variance** (Chapter 42): A difference arising that is apparently ‘bad’ from the perspective of the organisation. For example, when the total actual materials cost exceeds the total standard cost due to more materials having been used than anticipated. Whether it is indeed ‘bad’ will be revealed only when the cause of the variance is identified. It may, for example, have arisen as a result of an unexpected rise in demand for the product being produced.
- Annuity** (Chapter 45): An income-generating investment whereby, in return for the payment of a single lump sum, the annuitant receives regular amounts of income over a predefined period.
- Articles of Association** (Chapter 3): The document that arranges the internal relationships, for example, between members of the company, and the duties of directors. The Companies Act 1985 gives a model known as Table A.
- Associate undertaking** (Chapter 26): A company which is not a subsidiary of the investing group or company but in which the investing group or company has a long-term interest and over which it exercises significant influence.
- Attainable standard** (Chapter 41): A standard that can be achieved in normal conditions. It takes into account normal losses, and normal levels of downtime and waste.
- Balanced scorecard** (Chapter 47): A technique that assesses performance across a balanced set of four perspectives – customers, internal processes, organisational learning and growth, and financial.
- Bonus shares** (Chapter 9): Shares issued to existing shareholders free of charge. (Also known as scrip issues.)
- Break-even point** (Chapter 44): The level of activity at which total revenues equal total costs.
- Budget** (Chapter 38): A plan quantified in monetary terms in advance of a defined time period and usually showing planned income and expenditure and the capital employed to achieve a given objective.
- Business-to-business (B2B)** (Chapter 49): Businesses purchase from other businesses and/or sell their goods and services to other businesses.
- Business-to-consumer (B2C)** (Chapter 49): Businesses sell to consumers.
- By-product** (Chapter 37): Products of minor sales value that result from the production of a main product.
- Capital redemption reserve** (Chapter 5): A ‘non-distributable’ reserve created when shares are redeemed or purchased other than from the proceeds of a fresh issue of shares.
- Capital reserve** (Chapter 8): A reserve which is a balance of profit retained that can never be used for the payment of cash dividends. These are normally created specifically under the

provisions of the Companies Acts 1985 and 1989. Examples include a capital redemption reserve and a share premium account.

**Cash-based accounting** (Chapter 33): A receipts-and-payments-based accounting system.

**Consolidation accounting** (Chapter 16): This term means bringing together into a single balance sheet and profit and loss account the separate financial statements of a group of companies. Hence they are known as group financial statements.

**Contribution** (Chapter 36): The difference between sales income and marginal cost. (It can also be defined as sales income minus variable cost, which would virtually always produce the same answer.)

**Corporate governance** (Chapter 32): The exercise of power over and responsibility for corporate entities.

**Corporation tax** (Chapter 7): A form of direct taxation levied on the profits of companies. The rate is determined each year in the Finance Act.

**Cost centre** (Chapter 35): A production or service location, function, activity, or item of equipment whose costs may be attributed to cost units.

**Cost of control** (Chapter 17): An alternative expression to goodwill.

**Cost unit** (Chapter 35): A unit of product or service in relation to which costs are ascertained.

**Debenture** (Chapter 4): A bond or document acknowledging a loan to a company, normally under the company's seal and carrying a fixed rate of interest.

**Deferred taxation** (Chapter 7): Timing differences arise between the accounting treatment of events and their taxation results. Deferred taxation accounting adjusts the differences so that the accounts are not misleading.

**Economic order quantity (EOQ)** (Chapter 38): A mathematical method of calculating the amount of stock that should be ordered at a time and how frequently to order it, so that the overall total of the costs of holding the stock and the costs of ordering the stock can be minimised.

**Electronic commerce (e-commerce)** (Chapter 49): The use of electronic telecommunication technology to conduct business transactions over the Internet.

**Enterprise resource planning (ERP) system** (Chapter 48): A suite of software modules, each of which relates to a function of the organisation, such as order processing, production, creditor control, debtor control, payroll, marketing, and human resources.

**Equity accounting** (Chapter 26): A method of accounting for associated undertakings that brings into the consolidated profit and loss account the investor's share of the associated undertaking's results and that records the investment in the consolidated balance sheet as the investor's share of the associated undertaking's net assets including any goodwill arising to the extent that it has not previously been written off.

**Favourable variance** (Chapter 42): A difference arising that is apparently 'good' from the perspective of the organisation. For example, when the total actual labour cost is less than the total standard cost because fewer hours were worked than expected. Whether it is indeed 'good' will be revealed only when the cause of the variance is identified – it may be that fewer hours were worked because demand for the product fell unexpectedly.

**Finance lease** (Chapter 2): This is an agreement whereby the lessee enjoys substantially all the risks and rewards associated with ownership of an asset other than legal title.

**Flexible budget** (Chapter 40): A budget which, by recognising the difference in behaviour between fixed and variable costs in relation to fluctuations in output, turnover or other factors, is designed to change appropriately with such fluctuations.

- Gross equity accounting** (Chapter 26): A form of equity accounting applicable to joint ventures under which the investor's share of the aggregate gross assets and liabilities of the joint venture is shown on the face of the balance sheet and the investor's share of the joint venture's turnover is noted in the profit and loss account.
- Hire purchase agreements** (Chapter 2): These are legal agreements by which an organisation can obtain the use of an asset in exchange for payment by instalment.
- Holding company** (Chapter 16): The outdated term for what is now known as 'parent undertaking'.
- Ideal standard** (Chapter 41): A standard that is based upon the premise that everything operates at the maximum level of efficiency. It takes no account of normal losses, or of normal levels of downtime and waste.
- Irrelevant costs** (Chapter 46): Those costs of the future that will not be affected by a decision.
- Job costing** (Chapter 37): A costing system that is applied when goods or services are produced in discrete jobs, either one item at a time, or in batches.
- Joint product** (Chapter 37): Two or more products, each of which has significant sales value, created in the same production process.
- Joint venture** (Chapter 26): An entity in which the reporting entity holds an interest on a long-term basis and which is jointly controlled by the reporting entity and one or more other venturers under a contractual arrangement.
- Limited company** (Chapter 3): A form of organisation established under the Companies Acts as a separate legal entity, and required to comply with the provisions of the Acts. The members of the company, known as shareholders, are liable only to pay the full price of the shares, not for any further amount, i.e. their liability is limited.
- Limiting factor** (Chapter 36): Anything that limits activity. Typically, this would be the shortage of supply of something required in production, for example, machine hours, labour hours, raw materials, etc. However, it could also be something that prevents production occurring, for example a lack of storage for finished goods, or a lack of a market for the products.
- Margin of safety** (Chapter 44): The gap between the level of activity at the break-even point and the actual level of activity.
- Marginal costing** (Chapter 36): An approach to costing that takes account of the variable cost of products rather than the full production cost. It is particularly useful when considering utilisation of spare capacity.
- Master budget** (Chapter 40): The overall summary budget encompassing all the individual budgets.
- Memorandum of Association** (Chapter 3): The document that discloses the conditions governing a company's relationship with the outside world.
- Minority interests** (Chapter 17): Shareholders in subsidiary undertakings other than the holding undertaking who are not therefore part of the group.
- Net present value (NPV)** (Chapter 45): The sum of the present values of a series of cash flows.
- Normal losses** (Chapter 37): Losses arising in the production process that could not be avoided.
- Operating lease** (Chapter 2): An agreement whereby the lessor retains the risks and rewards associated with ownership and normally assumes responsibility for repairs, maintenance and insurance.
- Parent undertaking** (Chapter 16): Although FRS 2 should be studied for a full and proper definition, the one that will suffice for the time being is 'an undertaking which controls or has a dominating influence over the affairs of another undertaking'.
- Pre-incorporation profit or loss** (Chapter 6): A profit or loss which arises immediately before a limited company is legally incorporated. Any such profit will be treated as capital profit not for

distribution while, for sake of prudence, any such loss will be set against post-incorporation profits.

**Present value** (Chapter 45): The amount that a future cash flow is worth in terms of today's money.

**Process costing** (Chapter 37): A costing system that is applied when goods or services are produced in a continuous flow.

**Provision** (Chapter 8): An amount written off or retained by way of providing for depreciation, renewals or diminution in value of assets, or retained by way of providing for any known liability of which the amount cannot be determined with 'substantial accuracy'.

**Public sector** (Chapter 33): All organisations which are not privately owned or operated.

**Relevant costs** (Chapter 46): Those costs of the future that will be affected by a decision.

**Resource accounting** (Chapter 33): An accounting system based on normal commercial practice, including accruals and movements in cash flows.

**Revenue reserves** (Chapter 8): A balance of profits retained available to pay cash dividends including an amount voluntarily transferred from the profit and loss appropriation account by debiting it, reducing the amount of profits left for cash dividend purposes, and crediting a named reserve account, such as a general reserve.

**Rights issue** (Chapter 4): An issue of shares to existing shareholders.

**Share discount** (Chapter 4): Where a share was issued at a price below its par, or nominal value, the shortfall was known as a discount. However, it is no longer legal under the Companies Acts to issue shares at a discount.

**Share premium** (Chapter 4): Where a share is issued at a price above its par, or nominal value, the excess is known as a premium.

**Shares at no par value** (Chapter 4): Shares which do not have a fixed par, or nominal value.

**Sinking fund** (Chapter 5): An external fund set up to meet some future liability such as the redemption of debentures. Cash is paid into the fund at regular intervals to accumulate with compound interest to the required future sum.

**Standard cost** (Chapter 41): An estimate of what costs should be.

**Standard costing** (Chapter 41): A control technique that compares standard costs and standard revenues with actual costs and actual revenues in order to determine differences (variances) that may then be investigated.

**Subsidiary company** (Chapter 16): The outdated term for what is now known as a 'subsidiary undertaking'.

**Subsidiary undertaking** (Chapter 16): An undertaking which is controlled by another undertaking or where that other undertaking exercises a dominating influence over it.

**Sunk costs** (Chapter 46): A cost which has already occurred and cannot, therefore, be avoided whatever decision is taken. It should be ignored when taking a decision.

**Supply chain** (Chapter 48): Everything within the two end-points of the continuous sequence running from demand forecasting through to receipt of payment from customers.

**Supply chain management** (Chapter 48): The system of control over the information and/or item flows both within and outwith the organisation that comprise the supply chain.

**Variance** (Chapter 41): The difference between budget and actual.

**Variance analysis** (Chapter 42): A means of assessing the difference between a predetermined cost/income and the actual cost/income.

**Work certified** (Chapter 15): The value of work in progress on a contract as certified by, for example, an architect or an engineer.

# Index

*Note:* This index does not include references to the glossary, but may be used in conjunction with it.

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