DAVID ALEXANDER AND CHRISTOPHER NOBES

Financial Accounting
An International Introduction

SECOND EDITION

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Financial Accounting

An International Introduction

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DAVID ALEXANDER

CHRISTOPHER NOBES

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Foreword to the first edition

For many years Professor Christopher Nobes and I have worked together as the two British representatives on the Board of the International Accounting Standards Committee. He and I have argued in many fora for the notion that there should be one single set of high quality worldwide standards so that a transaction occurring in Stuttgart, Sheffield, Seattle or Sydney should be treated in exactly the same way. That is not the case at present.

In a book recently published by Professor Christopher Nobes and David Cairns, 'The Convergence Handbook', they outlined the existing differences between British and International Accounting Standards. The intention of the book and the request by the UK's Accounting Standards Board for its production was to eliminate these differences. It is particularly important this should be done over the next five years as the European Commission has stated its intention that all consolidated statements of Listed Companies in the European Union should comply with International Accounting Standards by 2005. Clearly British Standards will have to change, although as British Standards themselves are of high quality it is very likely that some International Standards will also change.

To meet this challenge and to ensure that all countries have the same accounting standards, the International Accounting Standards Committee has been reconstituted with effect from 2001 to form a virtually full-time International Accounting Standards Board whose main mission is to seek convergence of accounting standards throughout the world.

This book by my friends, David Alexander and Christopher Nobes, is therefore particularly timely. It is based on a background in the European Union. It is written extremely clearly. (The real mark of a teacher is not to complicate but to simplify and the authors have certainly done that.) It is unusual in that it takes as its base not one country's standards but International Accounting Standards, which I firmly believe are going to be the worldwide requirements of the future.

The book will be of interest not only to the beginner but to those who wish to understand the thrust of International Accounting Standards. The authors make clear that accounting is still in many ways a primitive subject and is in a period of change, removing the most irrelevant aspects of the historical cost model and replacing them with accounting for fair values. Those coming into accounting now are going to see huge changes in the first few years of their careers as many of the ideas promulgated by academics many years ago become professional practice and as each country's national standards are changed to converge with the international consensus.

I enjoyed reading this book and I am sure that its many readers will also. I congratulate the authors for their foresight in producing such an excellent book and wish them well.

SIR DAVID TWEEDIE

January 2001 *Chairman, International Accounting Standards Board*

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Preface

This is the second edition of our book that is designed as an introductory text in financial accounting. What sets it apart from dozens of other books with that basic aim is that this book is not set in any one national context. Consequently, instead of references to national laws, standards or practices, the main reference point is International Financial Reporting Standards (IFRS).

Nevertheless, real enterprises operate in real countries even where they follow IFRS, and so such enterprises also operate within national laws, tax systems, financial cultures, etc. The background chosen in this book is the European Union (EU) and the wider European Economic Area (EEA). Where useful, we refer to EU Directives and to the rules or practices of particular European countries or companies.

This book is intended for those with little or no previous knowledge of financial accounting. It might be particularly appropriate for the following types of financial accounting courses taught in English at the undergraduate or postgraduate (e.g. MBA) level:

- courses in any country in the EU (or EEA), given the increasing use of IFRS by companies including the compulsory use for listed companies' consolidated statements;
- courses outside the EU where IFRS are likely to be a relevant reference point, e.g. in Eastern Europe and the (British) Commonwealth;
- courses anywhere in the world with a mixture of students from several different countries.

Depending on the objectives of teachers and students, stress (or lack of it) might be placed on particular parts of this book. For example, it would be possible to precede or accompany a course based on this book with an extensive examination of double-entry bookkeeping, such that the Annexes to chapters 2 and 3 become unnecessary. Or, on some courses, there might not be space or appetite for coverage of issues such as foreign currency translation (chapter 15) or accounting for price changes (chapter 16).

In writing this book we have, of course, made use of our experience over many years of writing and teaching in an international context. Thus, in some places we have adapted and updated material that we have used elsewhere in more specialist books to which the intended readers of this text would not have easy access. We have tried to remove British biases, but we may not have been fully successful and we apologize to readers who can still detect some.

This edition is updated for the extensive changes of the three years since writing the first edition. We have, also, expanded and amended the coverage of group accounting and of financial analysis.

There are five appendices, which we hope readers will find useful during and after a course based on this book. Appendix A contains a glossary of some terms

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used in IFRS (and UK and US) accounting. Appendices B and C summarize the requirements of the EU Fourth Directive and IFRS, respectively. Appendix D provides answers to the end-of-chapter self-assessment questions. Appendix E provides outline feedback to the first two of each chapter's closing exercises. Feedback on the other exercises is given in an Instructor's Manual that is available electronically via the Companion Website at **www.booksites.net/alexander**. The manual also contains other material to assist lecturers.

In preparing the first edition, we were greatly assisted by comments from an apparently tireless team of reviewers, listed immediately hereafter. Certain reviewers have commented further this time. We are also grateful for much help from colleagues at Pearson. Despite all this help, there may be errors and omissions in our book, and for this we must be debited (in your books).

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University of Birmingham

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University of Reading

Reviewers

This book has benefited very much from the advice and critical evaluation of the following reviewers, whose comments throughout the preparation of the first edition are greatly appreciated:

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Abbreviations

ABC	activity-based costing
AE	anonymos etairia (public company, Greece – transliteration of Greek equivalent)
AG	*Aktiengesellschaft* (public company, Germany and Austria)
AktG	*Aktiengesetz* (German Stock Corporation Law)
ApS	*anspartsselskab* (private company, Denmark)
AS	*aktieselskab* (public company, Denmark) *aksjeselskap* (private company, Norway)
ASA	*almennaksjeselskap* (public company, Norway)
BV	*besloten vennootschap* (private company, Belgium and the Netherlands)
COB	*Commission des Opérations de Bourse* (Commission for Stock Exchange Operations, France)
CoCoA	continuously contemporary accounting
CONSOB	*Commissione Nazionale per le Società e la Borsa* (National Commission for Companies and the Stock Exchange, Italy)
CPP	current purchasing power
CRC	current replacement cost
CV	current value
DCF	discounted cash flow
DRSC	*Deutches Rechnungslegungs Standards Committee* (German Regulatory Standards Committee)
DV	deprival value
EBIT	earnings before interest and tax
EEA	European Economic Area
EFRAG	European Financial Reporting Advisory Group
EPE	etairia periorismenis efthynis (private company, Greece – transliteration of Greek equivalent)
EPS	earnings per share
EU	European Union
EV	economic value
FAR	Föreningen Auktorisade Revisorer (a national accountancy body, Sweden)
FASB	Financial Accounting Standards Board
FIFO	first in, first out
GAAP	generally accepted accounting principles

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GmbH	*Gesellschaft mit beschränker Haftung* (private company, Germany and Austria)
GPLA	general price level adjusted
HC	historical cost
HGB	*Handelsgesetzbuch* (Commercial Code, Germany)
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IFAC	International Federation of Accountants
IFRIC	International Financial Reporting Interpretations Committee
IOSCO	International Organization of Securities Commissions
JV	joint venture
Lda	*sociedade por quotas* (private company, Portugal)
LIFO	last in, first out
Ltd	private limited company (United Kingdom)
NBV	net book value
NRV	net realizable value
NV	*naamloze vennootschap* (public company, Belgium and the Netherlands)
NYSE	New York Stock Exchange
Oy	*Osakeyhtiö-yksityinen* (private company, Finland)
Oyj	*Osakeyhtiö julkinen* (public company, Finland)
PE	price/earnings
PCG	*plan comptable général* (general accounting plan, France)
plc	public limited company (United Kingdom)
PPE	property, plant and equipment
RC	replacement cost
RJ	*Raad voor de Jaarverslaggeving* (Council for Annual Reporting, the Netherlands)
ROCE	return on capital employed
ROE	return on equity
ROOE	return on ordinary owners' equity
SA	*sociedade anónima* (public company, Portugal) *sociedad anónima* (public company, Spain) *société anonyme* (public company, Belgium, France and Luxembourg)
Sarl	*société à responsabilité limitée* (private limited company, Belgium, France and Luxembourg)
SEC	Securities and Exchange Commission (United States)
SIC	Standing Interpretations Committee
SpA	*società per azioni* (public company, Italy)
SRL	*società à responsabilità limitata* (private company, Italy) *sociedad de responsabilidad limitada* (private company, Spain)

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SRS	*Svenska Revisorssamfundet* (a Swedish accountancy body)
TFV	true and fair view
UK	United Kingdom
US	United States

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Part 1

THE CONTEXT OF ACCOUNTING

1 Introduction
2 Some fundamentals
3 Frameworks and concepts
4 The regulation of accounting
5 International differences and harmonization
6 The contents of financial statements
7 Financial statement analysis

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Introduction

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- explain the scope and uses of accounting;
- outline the role of national and international accountancy bodies;
- give some examples of the usages of accounting terms in different varieties of English.

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1.1 Purposes and users of accounting

There is no single authoritative and generally accepted definition of financial accounting, or of accounting in general. It began as a practical activity in response to perceived needs, and for most of its development it has progressed in the same way, adapting to meet changes in the demands made on it. Where the needs differed in different countries or environments, accounting tended to develop in different ways as a response to a particular environment, essentially on the Darwinian principle: useful accounting survived. Because accounting developed in different ways, it is likely that definitions suggested in different contextual surroundings will vary.

At a general level it is at least safe to say that accounting exists to provide a service. In the box below there are three definitions. These have all been taken from the same economic and cultural source (the United States) because that country has the longest history of attempting explicit definitions of this type. Note that each suggested definition seems broader than the previous one, and the third one, from 1970, does not restrict accounting to *financially* quantifiable information at all. Many would not accept this last point even in the US context and, as will be explored at length in this book, attitudes to accounting and its role differ substantially around the world and certainly between European countries.

Some definitions of accounting

Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and interpreting the results thereof.

'Review and Resume', *Accounting Terminology Bulletin No. 1* (New York: American Institute of Certified Public Accountants, 1953), paragraph 5.

Accounting is the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information.

American Accounting Association, *A Statement of Basic Accounting Theory* (Evanston, IL: American Accounting Association, 1966), p. 1.

Accounting is a service activity. Its function is to provide quantitative information, primarily financial in nature, about economic entities that is intended to be useful in making economic decisions, in making resolved choices among alternative courses of action.

Accounting Principles Board, Statement No. 4, 'Basic Concepts and Accounting Principles Underlying Financial Statements or Business Enterprises' (New York: American Institute of Certified Public Accountants, 1970), paragraph 40.

If information is to be useful, then some obvious questions arise: useful to whom and for what purposes? A moment of thought will suggest a number of different types of people likely to be dealing in some way with business enterprises:

1. *Managers*. These are the people who have to take decisions, both day-to-day and strategic, about how the scarce resources within their control are to be used. They need information that will enable them to predict the likely outcomes of alternative courses of action. As part of this process, they will need feedback on

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the results of their previous decisions in order to extend successful aspects of the decisions, and to adapt and improve the unsuccessful aspects.

2. *Investors*. A large enterprise may have many owners (investors and/or shareholders) who are not the managers of the enterprise. These providers of capital are concerned with the risk inherent in, and return provided by, their investments. They need to determine whether they should buy, hold or sell their investments. Shareholders are also interested in information to assess the ability of the enterprise to pay them a return (known as a dividend). Potential shareholders have similar interests.
3. *Lenders*. Lenders (such as banks) are interested in whether loans, and the interest attaching to them, will be paid when due.
4. *Employees*. Employees and their representative groups are interested in the profitability of their employers. They also want to assess the ability of the enterprise to continue to provide remuneration, retirement benefits and employment opportunities.
5. *Suppliers*. These want to be able to assess whether amounts owing will be paid when due. Suppliers are likely to be interested in an enterprise over a shorter period than lenders, unless they depend upon the enterprise as a major continuing customer.
6. *Customers*. Customers need information about the continuance of an enterprise, especially when they have a long-term involvement with the enterprise.
7. *Governments*. Governments and their agencies need information in order to regulate the activities of enterprises and to collect taxation, and as the basis for national income and similar statistics.
8. *Public*. Enterprises affect members of the public in a variety of ways; for example, enterprises pollute the atmosphere or despoil the countryside. Accounting statements (generally called 'financial statements') may give the public information about the trends and recent developments of the enterprise and the range of its activities.

This list leads to a very important distinction, namely that between *management accounting* and *financial accounting*. Management accounting is that branch of accounting concerned with the provision of information intended to be useful to management within the business. Financial accounting is the branch of accounting intended for users outside the business itself, i.e. groups 2–8 above. The wording for these groups is closely based on a document called *Framework for the Preparation and Presentation of Financial Statements* issued by the International Accounting Standards Committee (IASC), discussed further in chapter 3.

It is clear from the previous paragraphs that the needs of users to whom financial accounting is addressed are very diverse, and so it does not follow that the same information will be valid for all their purposes. Nevertheless, it is usually assumed that one set of financial statements in the public domain should be able to satisfy most needs. The IASC Framework (paragraph 10) goes on to assert that:

> While all of the information needs of these users cannot be met by financial statements, there are needs which are common to all users. As investors are providers of risk capital to the enterprise, the provision of financial statements that meet their needs will also meet most of the needs of other users that financial statements can satisfy.

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This last sentence would certainly earn a fail mark on any course in logic or philosophy, but the view is widely followed in practice; that is, financial reporting is seen by the IASC as largely designed to supply investors with useful information. Accepting, however, that the needs of different users are likely to be different and that different users may predominate in different countries, it is clear that different national environments (cultural, political and economic) are likely to lead to different accounting practices. Indeed, financial reporting to various users (as opposed to the mere recording of transactions, which is known as bookkeeping) reflects the biases and norms – sometimes long term, sometimes transitory – of the societies in which it is embedded. This area is developed later in chapter 5.

Activity 1.A In what various ways can and should financial reporting (the end product of financial accounting) be different from reporting to management? Think about the different purposes of these two types of accounting, and how these purposes affect their operation.

Feedback Management accounting can be carried out on the basis that no information need be kept secret for commercial reasons and that the preparers will have no incentive to disguise the truth. This is because the management is giving information to itself. So, the information does not need to be externally checked. It can be more detailed and more frequent than for financial reporting because there is no expense of external checking or publication. Also, the management will not want any biases, whereas some outside users may prefer a tendency to understate profits and values where there is uncertainty. Management may be happy for many estimates about the future to be made, which might be too subjective for external reporting. Indeed, some management accounting figures involve forecasting all the important figures for the *next* year, whereas financial reporting concentrates on the immediate past.

Another point is that there do not need to be any rules imposed on management accounting because management can trust itself. By contrast, financial reporting probably works best with some clear rules from outside the enterprise in order to control the management and help towards comparability of one enterprise with another.

Having distinguished financial accounting from management accounting, there are some further possible confusions to address. The function of external *auditing* is quite separate from that of financial accounting. Auditing is a control mechanism designed to provide an external and independent check on the financial statements and reports published by those enterprises. Financial reports on the state of affairs and the past results of enterprises are prepared by accountants under the control of the managers of the enterprises, and then their validity is assessed by auditors. The wording used by auditors in their reports on financial statements varies considerably between countries, and the meaning and significance of the words that they use varies even more. There is inevitably some conflict between the necessity for an auditor to keep the management of the enterprise happy, and the necessity for provision of an expert and independent check. A study of auditing is outside the scope of this book, but the reader from

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any particular country should note that the role, objectives and effectiveness of the audit function in other countries may differ from those of his or her existing experience. For example, in Japan, the statutory auditors of most companies are not required to be either expert or independent; in contrast, in some other countries, statutory auditors have to comply with stringent technical and independence requirements.

Another set of distinctions which must be made clear are those between *finance*, *financial management* and *financial accounting*. Very broadly, finance is concerned with the optimal means of *raising* money, financial management is concerned with the optimal means of *using* it, and financial accounting is the reporting on the results from having used it. Finally, financial accounting must be carefully distinguished from bookkeeping. *Bookkeeping* is about recording the data – about keeping records of money and financially related movements. It is financial accounting (and management accounting) that takes these raw data, and then chooses and presents them as appropriate. It is financial accounting that acts as the *communicating* process to those outside of the enterprise.

1.2 Accounting regulation and the accountancy profession

Activity 1.B How should the provision of accounting information to users outside the enterprise be controlled? Think of as many regulators and ways of regulating as you can.

Feedback Accounting could be regulated in many ways, for example by:

- the market
- the government, through ministries
- parliament, through laws or codes
- stock exchanges
- the accountancy profession
- committees of members from large enterprises.

Two extreme answers to the question of regulation can be envisaged. The first is that it should be determined purely by market forces. A potential supplier of finance will be more willing to supply it if there is relevant and reliable information about how and by whom the finance will be used. So, a business providing a good quality and quantity of financial information will obtain more and cheaper finance. Therefore, enterprises have their own market-induced incentive to provide accounting information that meets the needs of users. The second extreme answer is that the whole process should be regulated entirely by the 'state', and some legal or bureaucratic body should specify what is to be reported and should provide an enforcement mechanism.

Neither extreme is consistent with modern capitalist-based economies, but the balance adopted between the two varies quite sharply around the world. The points mentioned so far in this section only consider the market and the state, but there is a third important force to consider, namely the private sector, including the accountancy profession.

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The profession is organized into associations under national jurisdictions. The European Union requires two types of organization: qualifying bodies (which set exams and might set technical rules) and regulatory bodies (which are under government control and which supervise statutory audit). In some countries, such as the United Kingdom, various accountancy bodies are allowed to fulfil both roles, and many members of the profession do not work as auditors. In some other countries, such as France and Germany, the roles are fulfilled by separate bodies of 'accountants' and 'auditors', e.g. in France by *experts comptables* and *commissaires aux comptes*, respectively. Professional bodies are responsible for monitoring the activities of their members and for standards of both general ethics and professional competence. However, in some countries the profession also takes on much of the role of *creating* the auditing rules under which its members will operate. In some countries (e.g. Denmark, the Netherlands and the United Kingdom), the rules that govern how enterprises perform their financial reporting are also set by professional bodies or by private-sector committees of accountants (as standard setters).

There is now widespread agreement within EU member states, and others elsewhere, of the need for carefully thought-out comprehensive regulation. This statement leaves open two important points of detail. The first is the extent to which comprehensive regulation needs to be flexible in detailed application, or (alternatively) to be precise but inflexible. The second is the relative position and importance of state regulation (e.g. Companies Acts or Commercial Codes) compared with private-sector regulation (e.g. accounting standards). As will be seen later (particularly in chapter 4), differences in attitudes to both these questions can be significant in their effects on accounting practice in different jurisdictions.

The coordinating organization for the accountancy profession around the world is the International Federation of Accountants (IFAC). Its stated purpose is 'to develop and enhance a coordinated world-wide accountancy profession with harmonized standards'. International auditing standards are produced by IFAC's International Auditing Practices Committee. An important aspect of IFAC has been its relationship with the International Accounting Standards Committee (IASC). The latter was created in 1973 and, until 2001, all member bodies of IFAC were automatically members of IASC.

As discussed in more detail in chapter 5, with effect from 2001 the International Accounting Standards Committee and the organisations surrounding it were completely restructured. The old IASC disappeared and was replaced by the IASC Foundation whose main operating arm is the International Accounting Standards Board (IASB). We generally refer to the IASB in this book, unless temporal specificity requires otherwise. International Accounting Standards (IASs) were adopted by the IASB but new standards are called International Financial Reporting Standards (IFRSs). Taken together, IASs and IFRSs are generically called IFRSs.

The IASB is now independent and has total autonomy in the setting of international standards. Its objectives are formally stated as follows:

(a) to develop, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent and comparable information in financial statements and other financial reporting to help participants in the world's capital markets and other users to make economic decisions;

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(b) to promote the use and rigorous application of those standards; and
(c) to bring about convergence of national accounting standards and IFRS to high quality solutions.

The implications of diverse national backgrounds and attitudes, of diverse regulatory groupings, and of diverse attitudes to such factors as the role of law, professional independence, and so on are a major underlying theme of this book.

1.3 Language

Many readers of this book will be trying not only to master a subject new to them but also doing so in a language that is not their first. One added difficulty is that there are several forms of the English language, particularly for accounting terms. UK terms and US terms are extensively different. Some examples are shown in the first two columns of Table 1.1. At this stage, you are not expected to understand all of these terms; they will be introduced later, as they are needed.

The International Accounting Standards Board operates and publishes its standards in English, although there are approved translations in several languages. The IASB uses a mixture of UK and US terms, as shown in the third column of Table 1.1. On the whole, this book uses IASB terms.

Table 1.1 Some examples of UK, US and IASB terms

UK	*US*	*IASB*
Stock	Inventory	Inventory
Shares	Stock	Shares
Own shares	Treasury stock	Treasury shares
Debtors	Receivables	Receivables
Creditors	Payables	Payables
Finance lease	Capital lease	Finance lease
Turnover	Sales (or revenue)	Sales (or revenue)
Acquisition	Purchase	Acquisition
Merger	Pooling of interests	Uniting of interests
Fixed assets	Non-current assets	Non-current assets
Profit and loss account	Income statement	Income statement

1.4 Excitement in accounting

Accounting is not universally regarded as an exciting and exhilarating area of activity or study, but it can be fascinating, in several ways:

- in itself, because it is an incomplete and rapidly evolving discipline and its study allows the interest of uncertainty and discovery;
- in application, because the theoretical ideas become intimately bound up with human attitude and human nature;
- in effects, because it has a major impact on financial decisions, share prices, etc.;
- in the international sphere, because of its integration with cultural, economic and political change.

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At present, a further element exists that increases the interest of accounting. The early years of this millennium are witnessing enormous change in several factors connected with accounting. Business is increasingly being carried out electronically; old types of industry are giving way to new; markets are becoming global; accounting information can travel faster and more cheaply. In Europe in particular, closer cooperation is underway. A common currency (the euro) has been launched, and expansion of the European Union continues.

The final reason – one that particularly relates to the authors – is that we are seeking to communicate the importance of accounting in a genuinely international rather than a national context. We hope that our work leads to greater understanding by readers (and between readers), whatever their background and starting point.

1.5 The path ahead

The structure of the remainder of this book is as follows. Part 1 continues by investigating the fundamental principles and conventions that form the basis of accounting thought and practice. Chapter 2 outlines the basic financial statements, and their relationships. There is also an Annex to the chapter to introduce double-entry bookkeeping. Chapter 3 looks at the main conventions underlying accounting, and particularly at the framework of concepts used by the IASB. An Annex to that chapter takes double-entry bookkeeping further. For the reader with no accounting background it is essential to understand the thinking that underlies what accountants do; for the reader with previous accounting or possibly bookkeeping experience, the two chapters should still be regarded as essential reading, for they bring out the interrelationships between the various ideas and techniques.

Chapter 4 then looks at ways in which financial reporting can be regulated, and how it is regulated in several countries. Chapter 5 introduces the influences on, and the nature of, international differences in accounting. Chapter 6 outlines the normal contents of the annual reports of large commercial enterprises. The standards of the IASB are used as the main point of reference. Finally in Part 1, Chapter 7 introduces the topic of analysis: how to interpret financial statements and how to compare one enterprise with another.

Part 2 (comprising chapters 8–16) explores the major topics of financial reporting in some detail. In many cases a variety of theoretical conclusions are possible, and a variety of different practices can be found in different countries. These are explored both for themselves and for their causes and implications. Again, the main context for the discussions is the standards of the IASB.

Finally, in Part 3 (chapters 17 and 18) the techniques of analyzing financial statements that were introduced in Part 1 are taken further, and the valuation of enterprises is examined. In several senses this Part should be seen as the culmination of what has gone before. Financial accounting is about communication, and study of the various influences on accounting in Part 1 and of the ways of tackling the problem issues in Part 2 should help in appreciating the real information content of accounting numbers – both what they mean and, just as importantly, what they do not mean.

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SUMMARY

- Accounting is designed to give financial information to particular groups of users. Different users may need different information.
- This book is particularly concerned with financial reporting by business enterprises to outside investors.
- Because the managers of an enterprise are often different people from the investors, the reports prepared by managers for those investors and other users need to be checked by auditors.
- The state and the accountancy profession may both play roles in the regulation of financial reporting.
- The International Accounting Standards Board (IASB) is an independent body that sets standards for financial reporting.
- The use of accounting terms differs considerably between UK, US and IASB practice.

? Exercises

Feedback on the first two of these exercises is given in Appendix E.

1.1 Is financial accounting really necessary?

1.2 It can be suggested that eight different groups of users of accounting information can be distinguished, i.e.:

- Managers
- Investors
- Lenders
- Employees
- Suppliers and other creditors
- Customers
- Governments and their agencies
- Public

Considering either all these groups or any number you care to choose, suggest the information that each is likely to need from accounting statements and reports. Are there likely to be difficulties in satisfying the needs of all the groups you have considered with one common set of information?

1.3 Outline the relative benefits to users of financial reports of:

(a) information about the past;
(b) information about the present;
(c) information about the future.

1.4 Do you think that users know what to ask for from their accountant or financial adviser? Explain your answer.

1.5 In the context of your own national background, rank the seven 'external' user groups suggested in the text (i.e. omitting managers), in order of the priority that you think should be given to their needs. Explain your reasons.

1.6 If at all possible, compare your answer to Exercise 1.5 with the answers of students from different national backgrounds. Try to explore likely causes of any major differences that emerge, in terms of legal, economic and cultural environments.

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2

Some fundamentals

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- describe the principles underlying the recording of financial data;
- outline the form and properties of income statements and balance sheets;
- explain the relationships between assets, liabilities, equity, revenue and expense;
- prepare simple financial statements from details of transactions.

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2.1 Introduction

The first chapter of this book looked at the role of accounting: what accounting is and why it exists. This chapter explores the basic ideas of financial accounting: the way accounting actually works, the logic behind the double-entry recording system, and the accounting statements of balance sheet and income statement. As suggested in Chapter 1, it is essential to understand the thinking that underlies accounting practice, but for this it is not necessary to master all the detailed techniques of bookkeeping. However, an introduction to the double-entry methodology will be needed for those who have not studied it before. Such an introduction is contained in an annex to this chapter, and this is taken further in an annex to chapter 3.

2.2 The balance sheet

A balance sheet is a document designed to show the state of affairs of an enterprise at a particular date. Students and practitioners of bookkeeping regard the balance sheet as the culmination of a long and complex recording process. If it does not balance, mistakes have definitely been made during the preparation process; they will have to be found, and more work is needed. The public at large tends to regard the balance sheet, which contains lots of big numbers and yet apparently magically arrives at the same figure twice, as proof of both the complicated nature of accountancy and of the technical competence and reliability of the particular accountants and auditors involved.

However, reduced to its simplest, a balance sheet consists of two lists. The first is a list of the *resources* that are under the control of the enterprise concerned – it is a list of *assets*. This English word derives from the Latin *ad satis* (to sufficient), in the legal context that such items could be used to pay debts. One modern definition of 'asset' that is accepted in several countries is that used by the International Accounting Standards Board (IASB):

> An asset is a resource controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise.

The need for a past event is so that accountants can identify the asset. It also helps them to attribute a monetary value to it.

To understand the second list, it is merely necessary to realize that the total of the assets must have come from somewhere. The second list shows where the assets came from, i.e. the monetary amounts of the *sources* from which the enterprise obtained its present stock of *resources*. Since those sources will require repayment or recompense in some way, it follows that this second list can also be regarded as a list of *claims* against the resources. The enterprise will have to settle these claims at some time, and this second list can therefore be regarded as amounts due to others.

The first list could also be regarded as the ways in which those sources have been applied at this point in time, that is, as a list of *applications*. These terms can be summarized as in Table 2.1.

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Table 2.1 The contents of a balance sheet

First list	*Second list*
Resources controlled	Sources
Assets	Where they came from
Applications	Claims

A balance sheet is often defined as a statement of financial position at a point in time. It is a list of sources, of where everything came from, and a list of resources, of everything valuable that the business controls. Since both lists relate to the same business at the same point in time, the totals of each list must be equal and the balance sheet must balance, because it is defined and constructed so that it has to balance. It represents two ways of looking at the same situation.

2.2.1 Simple balance sheets

When a new enterprise is created, the starting position is that there is no balance sheet because there is no enterprise. The new enterprise will have to be owned by someone. This outside person or other body will put some cash (a resource) into the enterprise as *capital*. Capital is the source of the cash which the enterprise now owns. So, after this first transaction, we can prepare our balance sheet – our two lists of resources and claims – as in Table 2.2.

Table 2.2 The balance sheet

Resources/Applications	*Claims/Sources*
Cash	Capital

Why it matters *The separation of the enterprise from the owner is implied by showing the owner's contribution as a claim/source. Without a record of this separation, the affairs of the owner and the business would become tangled up, so that the success of the enterprise would be unclear.*

Notice that the cash is an asset, i.e. a resource, whereas the capital is a claim on the enterprise by the owner. In a sense, the capital is 'owed' by the enterprise to the owner. Suppose that capital of €100,000 had been put in to begin the enterprise. This gives the balance sheet as in Table 2.3.

Table 2.3 Balance sheet of a new enterprise

Resources (€)		*Claims* (€)	
Cash	100,000	Capital	100,000
	100,000		100,000

Suppose the enterprise runs a retail shop that undertakes the following transactions after the initial input of capital of €100,000:

2. borrows €50,000 from the bank;
3. buys property for €50,000;

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4. buys inventory (goods to be sold again) costing €45,000, paying cash;
5. sells one-third of the quantity of this inventory for €35,000, on credit (i.e. with the customer agreeing to pay later);
6. pays wages for the period, in cash, of €4,000;
7. €16,000 of the money due from the customer is received;
8. buys inventory costing €25,000, on credit (i.e. the enterprise pays later).

Transaction 2 creates an additional source, and therefore claim, of €50,000 in the form of a loan from the bank. In return, the business has an asset or resource of an extra €50,000 of cash.

Activity 2.A

All the transactions can be analyzed in this way, as shown in Table 2.4. Look at Transactions 1–3 and make sure that you understand the changes in resources and claims (of matching size) for each.

Table 2.4 An analysis of the transactions (in €000)

	Resources			*Claims*	
Transaction	*Cash*	*Receivables*	*Other assets*	*Outsiders: liabilities*	*Owner: capital and profit*
1. Original capital	+100				+100
2. Borrowing	+50			+50	
3. Buy property	−50		+50		
4. Buy inventory for cash	−45		+45		
5. Sell some inventory		+35	−15		+20 (i.e. 35 −15)
6. Pay wages	−4				−4
7. Customer pays	+16	−16			
8. Buy inventory on credit			+25	+25	
TOTALS	+67	+19	+105	+75	+116

It is possible to prepare new balance sheets after each transaction. After Transaction 2, the balance sheet looks as in Table 2.5. The order of items in a balance sheet in the European Union is conventionally that longer-term items are shown first.

Table 2.5 Balance sheet after loan

Resources		*Claims*	
Cash	150,000	Capital	100,000
		Loan	50,000
	150,000		150,000

Transaction 3 involves using some of the cash to buy a long-term asset, a property from which to operate the business (see Table 2.6). One resource (part of the cash) is turned into another resource (property), so that the total resources and claims remain the same.

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Table 2.6 The balance sheet after buying property

Resources		*Claims*	
Property	50,000	Capital	100,000
Cash	100,000	Loan	50,000
	150,000		150,000

Activity 2.B It is now time for you to try out a transaction to check that the topic is clear to you. Refer back to Transaction 4 in the earlier list. Which new resources or claims result from this transaction?

Feedback Like Transaction 3, Transaction 4 also does not involve any new or additional resources, only a change in application of them: €45,000 which had previously been part of the store of cash has now been changed to a different application, i.e. inventory. Total resources and total claims remain constant (see Table 2.7).

Table 2.7 The balance sheet after buying inventory

Resources		*Claims*	
Property	50,000	Capital	100,000
Inventory	45,000	Loan	50,000
Cash	55,000		
	150,000		150,000

Transaction 5 is rather more complicated. There are some easy aspects. First, one-third of the inventory has disappeared and so the inventory figure must reduce from €45,000 to €30,000. Second, the customer has agreed to pay the enterprise €35,000. This does not mean that the enterprise has the cash; it does, however, own the *right* to receive the cash. This is most certainly an additional resource of the business, an additional asset. The business has something extra, namely the valuable and useful right to receive this cash. The €35,000 represents the receivable (or debtor, that is the customer who has an obligation to pay and from whom the business has a right to receive the additional asset). The conclusion as regards Transaction 5 is that one resource has fallen by €15,000, and a new resource has appeared in the amount of €35,000. This means that total resources have risen by €20,000. However, we cannot have a resource without a claim. What is the origin of this increase in resources of €20,000?

In intuitive terms it should be fairly clear what has happened. The enterprise has sold something for more than it had originally paid for it. It has turned an asset recorded as €15,000 (i.e. the cost of one-third of the physical amount of inventory) into an asset of €35,000 (i.e. the receivable) through its business operations. The enterprise has made a profit. Numerically, in order to make the balance sheet balance, it is necessary to put this profit of €20,000 onto the opposite side of the balance sheet, i.e. as a claim (see Table 2.8). Would this make sense in logical as well as numerical terms?

The answer is 'yes', as can be seen by looking back at the second list in Table 2.1. Extra 'assets' have come from the profitable trading of the enterprise.

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Table 2.8 The balance sheet after selling some inventory

Resources		*Claims*	
Property	50,000	Capital	100,000
Inventory	30,000	Profit	20,000
Receivable	35,000	Loan	50,000
Cash	55,000		
	170,000		170,000

The profits made by the enterprise are made for the ultimate benefit of the owner and therefore can be said to belong to the owner of the enterprise. Since these profits have been made within the enterprise and are still within the enterprise, but belong to the owner, it follows that they can be regarded as claims against the business by the owner. The profit can be seen as an extra amount belonging to the owners. Finally, it was mentioned earlier that claims can also be seen as sources. What is the source of these extra resources? The answer is that the source is the successful result of the trading operation. Profits *are* a source. At its simplest, the profit can be measured as an increase in the assets.

So the balance sheet shown in Table 2.8 follows from the accounting thought processes being developed. The extra resources of €20,000 are represented by extra sources of €20,000, namely the profit that is an additional ownership claim on the business. The profit change shown in the transition from Table 2.7 to Table 2.8 is not accompanied by a change in the amount of cash, because cash has not yet been received from the customer.

It should be obvious by now that each transaction has at least two effects on the balance sheet position. This should also be clear from the analysis in Table 2.4. Note how Transaction 5 has been recorded there.

Why it matters *Without good records of the receivables (debtors) and loans and other payables (creditors), the business might forget to demand its money from debtors, and would not know whether a creditor's claim for money should be paid. Financial disaster would follow.*

Moving on to Transaction 6, what two numerical alterations are needed to the balance sheet in order to incorporate the new event?

First, the amount of cash that the enterprise controls as asset, resource or application goes down by €4,000. This sum of money has physically been paid out by the enterprise, so that the amount remaining must be €4,000 less than it was before. Has this €4,000 been applied by being turned into some other asset, some other resource available to the enterprise to do things with? The answer seems to be 'no'. The wages relate to the past, and therefore they represent the reward given by the enterprise for work, for labour hours that *have already been used*.

The wages represent services provided and already totally consumed by the enterprise as part of the process of generating profit in the trading period, which we had previously recorded at €20,000. This therefore needs to be taken into account in calculating the overall profit or gain made by the enterprise through the operations over this trading period. Thus €4,000 needs to be deducted from the profit figure of €20,000 in order to show the correct profit from the operations

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Table 2.9 The balance sheet after paying wages

Resources		*Claims*	
Property	50,000	Capital	100,000
Inventory	30,000	Profit	16,000
Receivable	35,000	Loan	50,000
Cash	51,000		
	166,000		166,000

of the enterprise made for the benefit of the owner (see Table 2.9). The wages involved a reduction in assets (cash fell) and the recognition of a reduced claim by the owners (profits fell). This reduction in the measure of profit can also be called an *expense*.

Transaction 7 is straightforward. The starting position is that there was a receivable – an asset, an amount owed to the business – of €35,000. Some of this money is now received by the business. This tells us two things: first, the cash figure must increase by the amount of this cash received, i.e. by €16,000; second, the business is no longer owed this €16,000 because it has already received it. The receivable therefore needs to be reduced by €16,000 (see Table 2.10). In summary, we have an increase in the asset 'cash' and a decrease in the asset 'receivable', both by the same amount. Total applications remain the same, and therefore total sources remain the same too. The business has in no sense borrowed money through this transaction and, equally clearly, there has been no effect on profit – nothing has been gained, and all that has happened is that an earlier transaction has moved further towards completion.

Table 2.10 The balance sheet after receipt from debtor

Resources		*Claims*	
Property	50,000	Capital	100,000
Inventory	30,000	Profit	16,000
Receivable	19,000	Loan	50,000
Cash	67,000		
	166,000		166,000

Activity 2.C Look back to the earlier list of transactions to find the details of Transaction 8. In this final transaction of our example, the business buys more inventory for €25,000, and so the inventory figure in the balance sheet – the resource or asset of inventory – rises by €25,000. This has not yet been paid for and so there is no corresponding reduction in any of the other resources. The total of resources therefore rises by €25,000 – and so, of course, does the total claims. What is the particular claim on the business that increases by €25,000?

Feedback The business owes the supplier some cash for the extra inventory and therefore there is an extra claim, known as a payable (or a creditor). This is shown in Table 2.11. Also, you can now check all the analysis of all the transactions in Table 2.4 and the totals in that table.

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Table 2.11 The balance sheet after further purchase

Resources		*Claims*	
Property	50,000	Capital	100,000
Inventory	55,000	Profit	16,000
Receivable	19,000	Loan	50,000
Cash	67,000	Payable	25,000
	191,000		191,000

The claims from third parties (outsiders other than the owner), such as the payable from Transaction 8 and the loan from Transaction 2, are obligations that can be called *liabilities*. This English word derives from the word 'liable', meaning tied or bound or obliged by law. The IASB defines a liability as:

> a present obligation of the enterprise arising from past events, the settlement of which is expected to result in an outflow from the enterprise of resources embodying economic benefits.

This definition can be seen as portraying a liability as a negative version of an asset. Both definitions are taken further, particularly in Part 2 of this book. Claims by the owners are not called liabilities but owner's *equity* (or various similar expressions). The English word 'equity' has a number of meanings, but in the accounting context it means the owner's stake in the enterprise. In Table 2.11, the equity is €116,000 (the sum of the first two items: the original capital plus the profit), whereas the liabilities to the third parties are €75,000 (the sum of the second two items).

The right-hand side of the balance sheet of Table 2.11 could be redrawn to show the two types of claims, as shown in Table 2.12. Notice how this fits in with the totals of the claims in Table 2.4.

Table 2.12 The claims side of the balance sheet showing the two types

Equity:		
Capital	100,000	
Profit	16,000	
		116,000
Liabilities:		
Loan	50,000	
Payable	25,000	
		75,000
Total		191,000

This example has been explored at considerable length because it is useful to keep thinking in terms of resource and claim. Is a transaction changing one resource into another? Or is it getting more resources from somewhere and therefore increasing both lists, namely both sides of the balance sheet? And if total claims increase, is it through operating successfully and making a profit, or is it

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through borrowing money or simply not yet paying for resources acquired? Try Exercises 2.1 and 2.2 from the end of this chapter at this point in order to reinforce the lessons learned here.

2.3 The income statement

It has been shown that any transaction, event or adjustment can be recorded in a given balance sheet to produce a new and updated balance sheet. Also, provided that one follows the logic of the resources-and-claims idea, the new balance sheet must inevitably balance.

It would be possible to carry on this process in the same way for ever, producing an endless series of instant balance sheets. This would not be very practicable, however. Users of accounting information may wish to see balance sheets monthly, half-yearly or yearly. They may also require current and ongoing information about the results of the operating activities of the business. In order to provide this, it is necessary to collect together and summarize those items that are part of the calculation of the profit figure for the particular period concerned.

The transaction that led to profit in the example in Section 2.2 (the sale of inventory) was expressed as an increase in assets. The transaction that led to a reduction in the profit (the wages) was expressed as a fall in assets. The calculation of profit will generally consist of these positive and negative elements. When the business makes a sale, then the proceeds of the sale are a positive part of the profit calculation, which is referred to as a *revenue*. On the other hand, the operating process involves the consumption of some business resources, an *expense*, which is the negative part. In the example explored in detail earlier, there were two such items. First, the resource of inventory was used, and so the original cost of the used inventory was included as a negative component of the profit calculation. Second, some of the resource of cash was used to pay the wages that had necessarily been incurred in the process of the business operations. The cost of these wages is also a negative component of the profit calculation. The two components can be seen in the 'owner' column of Table 2.4.

The income statement (sometimes called the profit and loss account) reports on flows of revenues and expenses of a period, whereas a balance sheet reports on the financial position (i.e. the stock of resources and claims) at the balance sheet date. Figure 2.1 shows this diagrammatically. From time to time (perhaps yearly), the balance sheet is drawn up to show the financial position at that particular point in time. For example, in Figure 2.1, the balance sheet is drawn up at 31 December 20X1 and again at 31 December 20X2. During the year 20X2, assuming that the owners have not introduced or withdrawn capital, the explanation for the changing balance sheet is the operations of the company. On balance, the assets of the company will have grown in 20X2 if there is an excess of revenues over expenses. The balance of the assets over the liabilities is called the net assets. This profit can also be seen as the size of (and the cause of) the increase in equity in year 20X2.

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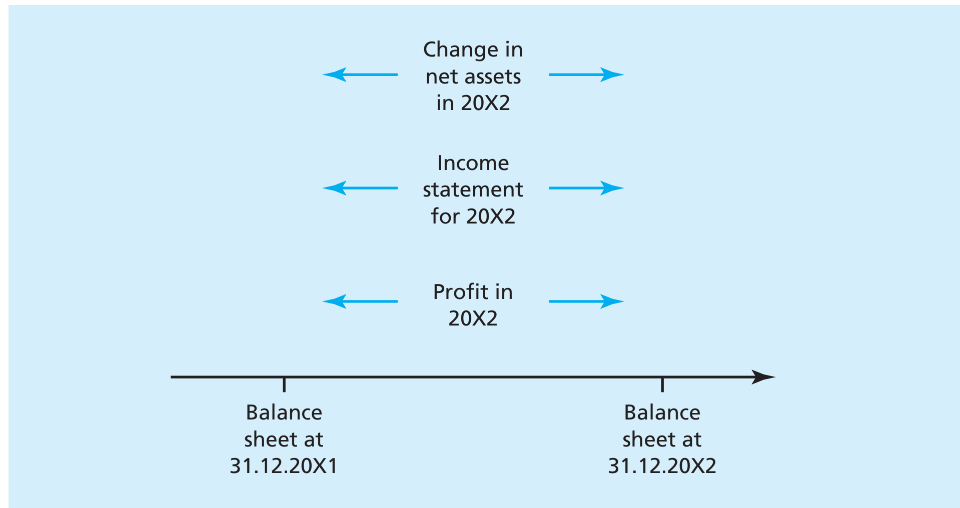
Figure 2.1 The balance sheet reports on stocks of things; the income statement reports on flows



2.3.1 Preparing the income statement

The logic of the income statement in relation to the balance sheet can be explored by reworking the transactions we used earlier, and by segregating out the expenses and the revenues from the other aspects of the transactions.

First, let us examine all the resources. Some of these have been used up in the period under consideration; some continue to be valuable because they will provide benefits in the future. The resources that the enterprise had fall into two types:

- those used up in the period (expenses); and
- those remaining (assets).

The claims can be seen to fall into three types:

- those arising from operations in the period (revenues);
- those contributed by the owners (capital); and
- those due to outsiders (liabilities).

We can set up a simple layout for recording our transactions under this five-way split, as shown in Table 2.13. On the left, the assets and expenses are what has happened to the sources of the enterprise's finance. On the right, the sources are shown. The capital and the liabilities are shown together, because they are both outstanding claims at the balance sheet date.

Table 2.13 Applications and sources

Applications	*Sources*
Assets Expenses	Capital and Liabilities Revenues

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Activity 2.D Take a large sheet of paper and divide it into four, with the appropriate four headings (*see* Table 2.13). Then record the effects of the seven transactions from before (after the initial injection of capital), one at a time, as adjustments to the previous position, on the same sheet of paper. The starting position (stage 1 in our earlier list) will be a simple repeat of Table 2.3, as in Table 2.14.

Table 2.14 The introduction of capital

Applications		*Sources*	
Assets		*Capital and Liabilities*	
Cash	100,000	Capital	100,000
Expenses		*Revenues*	
	0		0
	100,000		100,000

Transactions 2–8 can now be recorded again, and for convenience these are produced below:

2. borrows €50,000 from the bank;
3. buys property for €50,000;
4. buys inventory costing €45,000, paying cash;
5. sells one third of the quantity of this inventory for €35,000, on credit (i.e. with the customer agreeing to pay later);
6. pays wages for the period, in cash, of €4,000;
7. €16,000 of the money owed by the customer is received;
8. buys inventory costing €25,000, on credit.

Feedback Transactions 2–4 should be very straightforward, as they do not involve the creation of any profit and therefore do not give rise to the existence of any revenues or expenses. The position after incorporating Transactions 2, 3 and 4 is shown in Table 2.15.

Table 2.15 The position after Transaction 4

Applications		*Sources*	
Assets		*Capital and Liabilities*	
Property	50,000	Capital	100,000
Inventory	45,000	Loan	50,000
Cash	55,000		
	150,000		150,000
Expenses		*Revenues*	
	0		0
	150,000		150,000

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Compare this with Table 2.7. Totals have been put in on each of these tables, both for each of the four quarters and for each of the two sides. This is just to prove at each stage that the system is working properly both logically and numerically. There is no need for you to do this on your large sheet of paper and, indeed, since you are recording the adjustments cumulatively you would find it very messy to try to do so. Your sheet of paper should at this point look like Table 2.16.

Table 2.16 Working paper after Transaction 4

Applications		*Sources*	
Assets		*Capital and Liabilities*	
Property	50,000	Capital	100,000
Inventory	45,000	Loan	50,000
Cash	55,000		
Expenses		*Revenues*	

Transaction 5 is more interesting. This gives rise to a revenue because some inventory has been sold for €35,000 and therefore puts a €35,000 sales figure into the revenues section of our table. As some of the resources have now been used, i.e. some of the assets have become expenses, an amount of €15,000 needs to be removed from the asset figure for inventory and added to the expenses figure. We might call it the cost of goods sold. On the other hand an extra resource has been created – an extra asset. The business is now owed €35,000, which it was not owed before, and this new item – this receivable of €35,000 – needs to be added to the assets section. When you have incorporated these adjustments on to your sheet of paper, in terms of pluses and minuses, you should arrive at the position shown in Table 2.17.

Table 2.17 The position after Transaction 5

Applications		*Sources*	
Assets		*Capital and Liabilities*	
Property	50,000	Capital	100,000
Inventory	30,000	Loan	50,000
Receivable	35,000		
Cash	55,000		
	170,000		150,000
Expenses		*Revenues*	
Cost of goods sold	15,000	Sales	35,000
	185,000		185,000

Transaction 6 involves the payment of the wages bill for the period. Two points need to be recognized here: (a) the asset or resource of cash has gone down by €4,000; and (b) €4,000 of resources have been used in the operating process of the business, i.e. €4,000 has now become an expense. This €4,000 expense needs to be matched against the sales proceeds as part of the overall profit calculation for the operating period. This thinking leads to the position shown in Table 2.18.

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Table 2.18 After wages have been paid

Applications			*Sources*	
Assets			*Capital and Liabilities*	
Property		50,000	Capital	100,000
Inventory		30,000	Loan	50,000
Receivable		35,000		
Cash		51,000		
		166,000		150,000
Expenses			*Revenues*	
Cost of goods sold	15,000		Sales	35,000
Wages	4,000			
		19,000		
		185,000		185,000

The expenses (of €15,000 and €4,000) are shown indented to the left merely so that the total of assets (€166,000) and expenses (€19,000) can clearly be seen to be €185,000.

Neither Transaction 7 nor Transaction 8 involves the creation of any additional revenues or expenses. Transaction 7 increases the asset of cash and reduces the asset of receivables by the same amount. Cash is now being *received*, but it arises from an earlier revenue. The cash now received was earned at an earlier date and it is the act of earning, not the act of receiving, that determines the revenue. With Transaction 8 there is an additional source into the business, from the granting of credit to the business by the supplier. The application of this extra amount is the extra inventory. Incorporation of Transaction 7 and then Transaction 8 leads to the positions in Tables 2.19 and 2.20 respectively.

Table 2.19 Incorporating Transaction 7

Applications			*Sources*	
Assets			*Capital and Liabilities*	
Property		50,000	Capital	100,000
Inventory		30,000	Loan	50,000
Receivable		19,000		
Cash		67,000		
		166,000		150,000
Expenses			*Revenues*	
Cost of goods sold	15,000		Sales	35,000
Wages	4,000			
		19,000		
		185,000		185,000

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Table 2.20 After Transaction 8

Applications			*Sources*	
Assets			*Capital and Liabilities*	
Property		50,000	Capital	100,000
Inventory		55,000	Loan	50,000
Receivable		19,000	Payable	25,000
Cash		67,000		
		191,000		175,000
Expenses			*Revenues*	
Cost of goods sold	15,000		Sales	35,000
Wages	4,000			
		19,000		
		210,000		210,000

When you work out all the pluses and minuses on your sheet of paper, you should arrive at the final position as shown in Table 2.20 – but what does it mean? The bottom half of Table 2.20, the revenues and expenses, is an income statement. It contains all the positive parts of the profit calculation (the revenues) and all the negative parts of the profit calculation (the expenses). One can extract the bottom half from Table 2.20 and present this as the detailed profit calculation – a detailed statement of the result of trading for the period. In total, the revenues are €35,000 and the expenses are €19,000. The profit is the difference between the two, i.e. €16,000.

Table 2.20 may be looked upon in the following manner at first. The profit (the excess of revenues over expenses) is clearly a *source*. Since at all times the sources into the business must equal the applications by the business, it follows that the income statement (the whole of the bottom half of Table 2.20) can be replaced by the single profit number of €16,000 on the sources side in the top half of the table. This half of the table is, of course, the balance sheet. Replacing the revenues and expenses parts of Table 2.20 by the single profit figure in the balance sheet as a claim leads us exactly to Table 2.11 (check back for yourself). This profit, as shown earlier, represents an additional ownership claim on the business.

Second, one could look at Table 2.20 and think purely *numerically*. The bottom half, the income statement half, has an excess of €16,000 on the right-hand side. The top half, the balance sheet half, has an excess of €16,000 on the left-hand side. How can each part balance out? The answer, in purely numerical terms, is that €16,000 can be put into the left-hand side of the bottom half, and be called profit. Then €16,000 can be put into the right-hand side of the top half, and be called profit. The bottom half can now be dropped away altogether (as it consists of an equal number of pluses and minuses), leaving a balance sheet that balances. The logical interrelationship can be summarized as follows:

$$\text{Applications} = \text{Sources}$$
$$\therefore \quad \text{Assets} + \text{Expenses} = \text{Capital} + \text{Liabilities} + \text{Revenues}$$
$$\therefore \quad \text{Assets} = \text{Capital} + \text{Liabilities} + \text{Revenues} - \text{Expenses}$$
$$\therefore \quad \text{Assets} = \text{Capital} + \text{Liabilities} + \text{Profit}$$

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2.4 Two simple equations

As explained above, at the end of the period the profit figure is recorded in the balance sheet to show the total claim that the owners now have on the enterprise. This claim is the owner's equity: the original capital plus the profit. Tables 2.11 and 2.12 showed the balance sheet in terms of assets, equity and liabilities.

This balance sheet structure could be expressed as 'the balance sheet equation':

$$\text{Assets} = \text{Owner's equity} + \text{Liabilities}$$

Re-arranged, this becomes:

$$\text{Owner's equity} = \text{Assets} - \text{Liabilities} = \text{Net assets}$$

That is, the claims of the owner at a point in time (e.g. point 1 in time) are equal to the net assets of the enterprise. It will be useful to abbreviate this equation to:

$$OE_1 = A_1 - L_1$$

In this model, there are only two factors that can affect capital and cause it to change over time. These are, first, that the enterprise will operate and make a profit (or it could, of course, make a loss) and, second, that the owner will take some profit out of the business (by way of cash drawings) or the owner could invest extra capital into the business. Thus if profit for period 2 = P_2 and drawings = D_2, then the increase in capital is $P_2 - D_2$. So, if OE_2 is the owner's equity at the end of period 2, then:

$$OE_2 - OE_1 = P_2 - D_2$$

and

$$OE_1 + P_2 - D_2 = OE_2$$

This is our second simple equation.

We also know that P_2 equals the revenues (R_2) less the expenses (E_2) of the period:

$$P_2 = R_2 - E_2$$

The important point about these equations is the generality of their truth and application. To illustrate this generality, consider the classic schoolroom problem of the tank of water containing a given number of litres. A tap is pouring water in at the top at a given rate per hour, and water is leaking out of the bottom at a given rate per hour. Clearly, (opening water) + (water in) – (water out) = (closing water). If we know any three of these items, we can find the fourth. Further, it does not matter how the water is measured, provided it is measured in the same way all the time; consistency must be applied.

The idea of using equations can be carried further by combining these equations, as follows (ignoring transactions with owners, such as drawings):

$$\begin{aligned} & A_1 - L_1 = OE_1 \\ \therefore\ & A_1 - L_1 = OE_0 + P_1 \\ \therefore\ & A_1 - L_1 = OE_0 + R_1 - E_1 \\ \therefore\ & A_1 + E_1 = OE_0 + R_1 + L_1 \end{aligned}$$

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This, of course, is a re-phrasing of Tables 2.13 to 2.20, which showed assets and expenses on the left, and the other items on the right. The equation links together the five 'elements' of the financial statements. As explained in the Annex to this chapter, the items on the left (the applications) are called *debits* in the double-entry system, and the items on the right (the sources) are called *credits*.

Why it matters

- *The self-balancing nature of the accounting system shows up certain types of errors very efficiently.*
- *The equations are needed in computer systems that run the accounting of businesses.*

There is one further implication of all this, concerning the exact definitions of the five elements of the financial statements. The equity needs no separate definition because it rests on differences in the other four. However, there is a practical problem with the definitions of the other four elements, as will now be explained. Let us take the resources as in our examples. In principle, as explained before, there should be no contradiction here, because:

(a) Assets = the resources with remaining future benefits at the period end; and
(b) Expenses = the resources used up in the period.

It is time-consuming to have to measure both. Judgement is required in the measurement of either because there will be doubt about which category to put some resources into. Consequently, in practice, two solutions are available:

1. Expenses = resources used up in the period. Therefore
   Assets = the rest of the resources.
2. Assets = resources with remaining future benefits at the period end. Therefore
   Expenses = the rest of the resources.

Method 1 above, giving primacy to the definition of 'expense' (and 'revenue'), has been the traditional way of doing accounting. It concentrates on transactions in a period. It leaves assets (and changes in their values) as a secondary consideration. However, from the 1970s onwards there have been moves towards Method 2, giving primacy to the definition of 'asset' (and 'liability'). This is now the IASB's approach when setting accounting standards. This major point affects many issues and will be taken further in later chapters.

2.5 How cash flows fit in

In order to understand the operations of an enterprise and to predict its future, it is useful to examine its flows of cash as well as its flows of profit. These two sets of flows are different. For example, in terms of the eight transactions of section 2.2, the first four (receiving a capital input, borrowing money, and buying property and inventory) led to inflows and outflows of cash but no profits. The fifth transaction (selling the inventory for later payment by the customer) led to profit but no immediate cash flow.

As examined later in more detail (see chapters 6 and 13), a statement of cash flows is drawn up for the accounting period. It shows how cash has come in and

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out in the period, as an explanation of the change in total cash in the balance sheet from the beginning to the end of the period.

A restatement of the earlier Figure 2.1 to include cash flows is shown as Figure 2.2. In terms of the earlier example, the first column of figures in Table 2.4 shows all the transactions involving cash flows. They could be summarized in three types as in Table 2.21.

Figure 2.2 Flows during an example accounting period

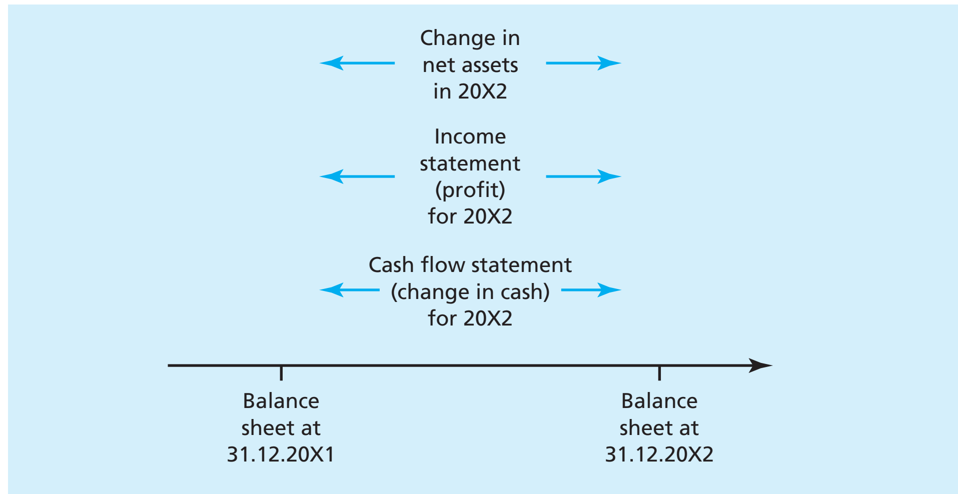

Table 2.21 A summary of the cash flows in Table 2.4

	€000
Operating flows (inventory −45, wages −4, customers +16)	−33
Investing flows (property −50)	−50
Financing flows (owner +100, bank +50)	+150
Cash change (starting from no cash)	+ 67

Mastering the fundamentals

It is important that you are able to follow and to apply the logic behind the system outlined in this chapter. Self-assessment questions follow after the summary. Following that there is an Annex concerning double-entry bookkeeping. Some readers will already be familiar with the techniques involved, but nevertheless a revision of them might be useful. For any reader, some familiarity with double entry will be necessary. A number of numerical exercises are given at the end of this chapter, and there are suggested solutions and discussion of the adjustments required given in Appendix E at the end of the book. The exercises will be easier once the material in the Annex has been mastered.

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SUMMARY

- A balance sheet is a periodic statement of the state of affairs or financial position of an enterprise. It contains a list of resources/applications and a list of claims/sources. The totals of the two lists are equal.
- Resources/applications are assets, and claims/sources are capital and liabilities. Transactions have equal-sized effects on both resources and claims. So the balance sheet balances.
- Making a profit leads to extra resources and increases the claims on the business from the owners.
- The income statement brings together all the revenues and expenses that cumulate to profit.
- Applications/resources can be used up in a period as expenses. What remains is assets.
- Sources/claims can be due to outsiders (liabilities) or can arise from this year's revenues or from owner's contributions.
- Assets plus expenses equal opening owner's equity plus revenues plus liabilities. In terms of the Annex to this chapter, debits equal credits.

Self-assessment questions

Suggested answers to these multiple choice self-assessment questions are given in Appendix D at the end of this book.

2.1 A balance sheet is designed to show:

(a) The financial position of an enterprise under accounting conventions.
(b) What the enterprise could be sold for.
(c) The performance of the enterprise for the year.
(d) What it would cost to set up a similar enterprise.

2.2 An enterprise's profit for the year may be computed by using which of the following formulae?

(a) Opening capital + drawings – capital introduced – closing capital.
(b) Closing capital + drawings – capital introduced – opening capital.
(c) Opening capital – drawings + capital introduced – closing capital.
(d) Closing capital – drawings + capital introduced – opening capital.

2.3 The profit earned by an enterprise in 20X1 was €72,500. The owner injected new capital of €8,000 during the year and withdrew goods for his private use that had cost €2,200. If net assets at the beginning of 20X1 were €101,700, what were the closing net assets?

(a) €35,000.
(b) €39,400.
(c) €168,400.
(d) €180,000.

2.4 Which of the following is *not* a satisfactory statement of the balance sheet equation?

(a) Assets = liabilities – owner's equity.
(b) Assets – liabilities = owner's equity.
(c) Assets = liabilities + owner's equity.
(d) Assets – owner's equity = liabilities.

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2.5 The purchase of an asset on credit:

(a) Increases assets and increases owner's equity.
(b) Increases assets and increases liabilities.
(c) Decreases assets and increases liabilities.
(d) Leaves total assets unchanged.

2.6 The effect of a credit entry on the payables account is to:

(a) Decrease the account balance.
(b) Increase the account balance.
(c) Decrease or increase the account balance.
(d) Decrease and increase the account balance.

2.7 After elimination of any transactions with the owners, the profit of an enterprise can be seen as:

(a) The increase in the net assets of the enterprise over a period.
(b) Its total sales for a period.
(c) The expenses of a period less the revenues.
(d) The increase in the owner's equity and liabilities over the period.

2.8 Which of the following is correct?

(a) Profit does not alter equity.
(b) Profit reduces equity.
(c) Equity can only come from profit.
(d) Profit increases equity.

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ANNEX Introduction to double-entry bookkeeping

This Annex explores the application and extension of the ideas of chapter 2 into the practical double-entry bookkeeping system used in the real world. This does not, of course, mean that you need to be expertly trained bookkeepers. In practice, most businesses now run their double-entry bookkeeping system with the aid of computer software. However, it is still helpful to have a clear basic understanding of the way the system works. The mechanics and terminology of simple bookkeeping principles will be used wherever necessary in later parts of the text.

If bookkeeping is new to you, then you should study this annex carefully. If you have done a lot of bookkeeping before, then you should still read this Annex in order to ensure that you see fully how it relates to the earlier arguments.

This introduction to double entry is taken further in the Annex to chapter 3, after some more accounting ideas have been explained.

Double entry: explanation and justification

It has been pointed out that any transaction has at least two effects. For example, when a €5,000 building is bought for cash, the asset records show an increase of €5,000 and the cash records show a decrease of €5,000. It has also been shown that a credit sale of €300 of inventory for €500 will give rise to three effects on the balance sheet (see Table 2A.1).

Table 2A.1 A simple balance sheet

	€		€
Inventory	−300	Profit	+200
Receivable	+500		

In practice it will usually be very difficult to tell how much inventory (at cost) has been disposed of in a sale, particularly if several types of material and labour have been combined to make a product. Therefore, it will also be difficult to calculate the profit on every small sale. So, as the chapter's text points out, accountants wait until the end of an accounting period to calculate profit. At that point the inventory used is taken to be the purchases during the period, adjusted for the fact that there was some inventory handed on at the beginning of the period and that there remains some inventory at the end.

Meanwhile, sales and purchases of inventory are recorded without adjusting profit figures. That is, sales transactions do not give rise to the effects in the above balance sheets on a daily basis. When a business makes a €500 credit sale, the sales records show a €500 increase and the receivables also show a €500 increase (*see* Table 2A.2). When there are €200 of purchases for cash, the purchases records show a €200 increase and the cash records show a €200 decrease.

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Table 2A.2 Effect of sales on balance sheet and profit

Balance sheet:	Receivable +€500	
Profit calculation		*Sales* *+€500 (i.e. Inventory + profit)*

Table 2A.3 contains some more examples of these and other types of transactions. Each transaction can be said to have an effect on the resources that the business controls and an equal effect on the claims against it. All the items in the 'Effect A' column can be said to represent increases in what the business controls or decreases in the claims against it.

Table 2A.3 Sample transactions

Transaction	*Value (€)*	*Effect A*	*Effect B*
1. Cash sale	50	+Cash	+Sales
2. Credit sale to X	80	+Receivables	+Sales
3. Loan raised from Y	2,000	+Cash	+Lenders
4. Machine bought	1,000	+Assets	−Cash
5. Electricity bill received	100	+Expenses	+Creditors
6. Electricity bill paid	100	−Creditors	−Cash

That is, for the six example transactions:

- for 1 and 3, it owns more cash;
- for 2, more cash is receivable;
- for 4, it controls more assets;
- for 5, it 'owes' less to its owners in profit (because of expenses);
- for 6, it owes less to outside creditors (payables).

All items in the 'Effect B' column can be understood as decreases in things controlled or increases in what is owed by the business. That is:

- for 1 and 2, it 'owes' more to the owners as profit (because of revenues);
- for 3, it owes more to lenders;
- for 4 and 6, it owns less cash;
- 5, it owes more to outside creditors.

For reasons discussed below, each of the Effects A is called a *debit* and each of Effects B is called a *credit*. And, at the end of a period during which accounts are run, the total of all debits equals the total of all credits. The system is self-balancing.

There is no stigma attached to 'debit' nor congratulatory connotation attached to 'credit'; they are merely labels to describe two groupings of transactions. It can be seen that 'debit' is by no means synonymous with plus or with minus; it means an increase in resources or a decrease in claims, as summarized in Table 2A.4.

The chapter has already shown that this is a further consequence of the accounting equation: assets plus expenses equals liabilities plus original capital

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Table 2A.4 The meaning of 'debit' and 'credit'

Debits	*Credits*
Increases in resources	Decreases in resources
Decreases in claims	Increases in claims
+Assets	−Assets
+Expenses	−Expenses
−Liabilities	+Liabilities
−Capital	+Capital
−Revenues	+Revenues

plus revenues. This can be expressed as:

$$\Sigma A_1 + \Sigma E_1 = \Sigma L_1 + C_0 + \Sigma R_1$$

where A is assets, E is expenses, L is liabilities, C is the opening capital, R is revenues, and Σ indicates the summation.

The words 'debit' and 'credit' have their origins in early Italian accounting, which particularly concerned itself with amounts due to and from persons. The derivations of the words will be clear to those who are familiar with any Latin-based language. 'Debit' means *he ought* (to pay us); a debit on a person's account means that he must pay the business at some future date. Similarly, 'credit' means *he trusts* (us to pay him). From these basic entries all the others fall into place, as in Table 2A.4.

In practice, most accountants would not work out whether, for example, any particular transaction involved a debit to cash or a credit to cash but would know by reflex. Many might not be able easily to work out from first principles which entry should be made. The system is merely a convention that is fairly easily learned and works well.

The mechanics of the double-entry system

Let us follow the six transactions of Table 2A.3 into some accounts, performing double entry. An 'account' is just a piece of paper (or perhaps a card, or a space on a computer disk) that stores all the information relating to one type of asset, one type of expense, and so on. The convention is that the debits are stored on the left of an account and the credits on the right.

So, Transaction 1 in Table 2A.3 (a cash sale) will be recorded on two accounts as shown in Figure 2A.1.

Figure 2A.1 Transaction 1

Cash account (€)			
Debits		*Credits*	
Sales	50		

Sales account (€)			
Debits		*Credits*	
		Cash	50

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The cash account records a debit to show that the business now owns €50 more cash (due to sales). The sales account records a credit to show that there have been revenues of €50 (due to cash receipts).

Transaction 2 (an €80 sale to X on credit) will give rise to an entry on the personal account of X and an extra entry on the sales account. No cash changes hands, so that there will be no effect on the cash account (see Figure 2A.2). Notice that by looking at one entry we can find out where the other

Figure 2A.2 Transaction 2

X (receivable) account (€)

Sales	80		

Sales account (€)

		Cash	50
		X	80

Figure 2A.3 Transaction 3

Cash account (€)

Sales	50		
Y	2,000		

Y (lender) account (€)

		Cash	2,000

Figure 2A.4 Transaction 4

Fixed assets account (€)

Cash	*1,000		

Cash account (€)

Sales	50	Fixed assets	*1,000
Y	2,000		

Figure 2A.5 Transaction 5

Electricity expenses account (€)

Creditors	100		

Creditors account (€)

		Electricity	100

Figure 2A.6 Transaction 6

Creditors account (€)

Cash	*100	Electricity	100

Cash account (€)

Sales	50	Fixed assets	1,000
Y	2,000	Creditors	*100

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related entry is.

The third transaction will give rise to two entries, shown in Figure 2A.3; and Transaction 4 will cause two extra entries (with asterisks in Figure 2A.4). Transaction 5 (receiving a bill but not paying it) is entered as in Figure 2A.5; while Transaction 6 (paying the bill later) will give the two new entries with asterisks shown in Figure 2A.6.

As the business year continues, more transactions will occur and give rise to double entries each time. Every sale (whether for cash or on credit terms) will be recorded on the right-hand side of the sales account as a credit. Every receipt of cash, for whatever reason, will be recorded on the left-hand side of the cash account as a debit. There is no theoretical limit to the number of accounts that can be used. The accountant must strike a balance between the need for detail and the desire to avoid unnecessary work.

We have seen that it is possible to redraw a balance sheet each time that any transaction occurs. In a normal business involving thousands of transactions in a year, this would be time-consuming and unproductive. Therefore, accounts (such as those above) are kept throughout the year, using double entry in order that the balance sheet is drawn up annually. In practice, businesses may do this more frequently.

Those accounts that record assets or liabilities or capital, which are accumulating entries throughout the year, are totalled at the end of the year to provide the asset, liability and capital figures for the balance sheet. Those accounts that record expenses and revenues are combined together to form a profit and loss account for the year. The profit or loss is transferred to the capital account, which is recorded on the balance sheet. We shall look at examples of this later in this Annex.

The advantages of double entry

There are several important advantages to be gained from using a double-entry system. First, since there are clearly two effects from each transaction, it is useful to record them both. Before double entry, a cash sale would have been recorded only in the cash book, which contained all other transactions affecting cash. This meant that in order to find a total of recorded sales it was necessary to look through all cash transactions picking out those relating to sales. For a large trader this would have been very laborious for even one day's sales, let alone one year's. So, double entry allows an easy totalling of sales, cash, electricity bills, wages, fixed assets, and so on. Without these totals, balance sheets and profit and loss accounts would be impossible to produce.

Totalling is made particularly easy because the accounts are two-sided, allowing positive and negative effects to be stored separately on the same account. This enables quick balancing of any accounts. For example, after the above transactions (which, of course, will normally have many more entries on them), the total of cash in hand can be worked out to be €950 (i.e. €2,050–€1,100). Table 2A.5 gives the balanced account.

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Table 2A.5 Cash account of example in Figure 2A.6 (€)

Sales	50	Fixed assets	1,000
Y	2,000	Creditors	100
		Balance carried down	950
	2,050		2,050
Balance brought down	950		

Double entry has been maintained by creating a brought-down debit of equal size to the balancing credit of €950. At the start of the next accounting period the cash account will already show €950, which is correct. Clearly, it will be a good idea to check the cash and the bank account to see whether there is in fact €950. If there is not, an investigation into shortages of cash or errors in the records should be carried out. The facts that all cash entries are on one account, that only cash entries are on it, and that the entries are separated into cash in (debit, left-hand side) and cash out (credit, right-hand side) aid quick totalling. The same applies to all accounts of whatever sort.

Another significant advantage is that it is known that the whole system should be self-balancing. When the end-of-year balancing act is performed, it is very unusual for the accounts of businesses of any substantial size to balance straight away. That is, when all the debits are added together, they probably do not equal all the credits as they should. This is due to inevitable errors of recording and analyzing the entries in the accounts. Any lack of balance warns the accountant that errors should be searched for. Also, since each entry is cross-referenced to its equal and opposite entry, it is fairly easy to understand the origin of any entry.

At this point, it should be said that accounting entries always carry a date in order to make it easier to understand them if they need to be checked in the future. For example, if Transaction 1 (the cash sale) occurred on 3 November 20X9, it might be recorded as in Figure 2A.7. (Note, however, that dates will only be used in accounts in this book when they are necessary for clarity.)

Figure 2A.7 Transaction 1 (dated)

Cash account (€)		Sales account (€)	
3 Nov. X9 Sales 50			3 Nov. X9 Cash 50

Several of these factors make it more difficult fraudulently to manipulate items in the accounts. It has been mentioned that checking is fairly easy. It is helped by the fact that balancing is impossible if the totals of only one account are manipulated, and adjustments of more than one account may entail the alteration of a figure that is regularly checked (e.g. the cash balance).

It has been said that at the end of the accounting period (which we have been considering as a calendar year), the revenue and expense accounts are combined to calculate profit. This is performed using double entry too. The revenue and

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Figure 2A.8 Revenue and expense accounts

Sales account (€)

Profit and loss a/c	*130	Cash	50
		X	80
	130		130

Electricity expense account (€)

Creditors	100	Profit and loss a/c	100*
	100		100

Profit and loss account (€)

Electricity	100*	Sales	130*

expense accounts already met are shown in Figure 2A.8 after year-end balancing and closing-off procedures have occurred (new entries have asterisks). The reasons for positioning these entries in the incomplete profit and loss account (or income statement) should become clear in the next section. Notice that the expense and revenue accounts have now been closed down by transferring their balances to the profit and loss account. They start the next year with no balances, apart from the exceptions noted below.

The trading account: gross profit

Conventionally, in many countries, there are two important subtotals in the calculation of profit: gross profit and net profit. The first part of the income statement could be called the trading account or operating account. It collects together the revenue and expense entries relating to the main trading activities of the business and leads to the calculation of gross profit.

Let us look at some more transactions specifically related to trading. For simplicity, consider the transactions of a new business called Ropa (Table 2A.6).

Table 2A.6 Transactions of Ropa

Transaction (€)	*Debit* (€)		*Credit* (€)	
1. Purchase 3,000 worth of marble on credit from C	Purchases a/c	3,000	C (creditor) a/c	3,000
2. Sell 1,000 worth of marble for cash to D	Cash a/c	1,000	Sales a/c	1,000
3. Purchase 2,000 worth of paint for cash from E	Purchases a/c	2,000	Cash a/c	2,000
4. Sell 500 worth of paint on credit to F	F (debtor) a/c	500	Sales a/c	500
5. Sell 800 worth of marble for cash to G	Cash a/c	800	Sales a/c	800
6. Return of 100 worth of paint by F	Sales a/c	100	F (debtor) a/c	100

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Each of these entries will be recorded on the appropriate side of the appropriate account. The accounts specifically connected with trading will look like Figure 2A.9 (the other halves of the double entries being in other accounts, as noted in the table). If these were the only trading entries in the accounting period, the trading account would be made up by closing down the above accounts and transferring the balances as shown in Figure 2A.10.

Figure 2A.9 Trading accounts

Purchases account (€)

1. C	3,000		
3. Cash	2,000		

Sales account (€)

6. F	100	2. Cash	1,000
		4. F	500
		5. Cash	800

Figure 2A.10 Balance transferred

Purchases account (€)

C	3,000	Trading a/c	5,000
Cash	2,000		
	5,000		5,000

Sales account (€)

F	100	Cash	1,000
Trading a/c	2,200	F	500
		Cash	800
	2,300		2,300

Trading account (€)

Purchases	5,000	Sales	2,200

This does not seem to be a very healthy trading position, but it must be remembered that not all the purchases will have been turned into sales. That is, there is usually some closing inventory remaining at the end of an accounting period. If stocktaking shows that there is €3,500 worth of marble and paint left, the trading account will look like Table 2A.7. Notice that the

Table 2A.7 Trading account of Ropa for the period ending 31 December (€)

Purchases	5,000	Sales	2,200
less Closing inventory	3,500		
	1,500		
Gross profit c/d	700		
	2,200		2,200
		Gross profit b/d	700

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double-entry system is being maintained. The gross profit entries balance each other. The closing inventory (and opening inventory) entries will be discussed later.

The income statement

The rest of the income statement leads on from the trading account and contains all other revenues and expenses that are not raw trading transactions.

Suppose that the only extra transactions in this accounting period of Ropa are those shown in Table 2A.8. The revenue and expense account halves of these transactions will thus appear as Figure 2A.11 (the other halves being in the cash account and G account, as noted in the table). These accounts have been shown already closed off. The other halves of the double entry for each of the asterisked items are in the income statement in Table 2A.9.

Table 2A.8 Further transactions of Ropa

Transactions (€)	*Debit* (€)		*Credit* (€)	
7. Wages of 100 paid	Wages a/c	100	Cash a/c	100
8. Rent for the period of 150 (not yet paid to the landlord)	Rent a/c	150	H (landlord) a/c	150
9. Advertising bill for the period, paid 30	Advertising a/c	30	Cash a/c	30
10. Stationery bought for 20	Stationery a/c	20	Cash a/c	20
11. More wages paid, 80	Wages a/c	80	Cash a/c	80
12. Rent received from subletting part of the premises, 40	Cash a/c	40	Rent received a/c	40

Figure 2A.11 Revenue and expense accounts

Wages account (€)

7. Cash	100	Income statement	*180
11. Cash	80		
	180		180

Rent (expenses) account (€)

8. H	150	Income statement	*150
	150		150

Advertising account (€)

9. Cash	30	Income statement	*30
	30		30

Stationery account (€)

10. Cash	20	Income statement	*20
	20		20

Rent (revenues) account (€)

Income statement	*40	12. Cash	40
	40		40

*See Table 2A.9

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Table 2A.9 Income statement of Ropa for the period ending 31 December (€)

Purchases	5,000	Sales	2,200
less Closing inventory	3,500		
	1,500		
Gross profit c/d	700		
	2,200		2,200
Wages	*180	Gross profit b/d	700
Rent	*150	Rent received	*40
Advertising	*30		
Stationery	*20		
Total expenses	380		
Net profit c/d	360		
	740		740
		Net profit b/d	360

*See Figure 2A.11

As before, the double-entry system is strictly maintained. The rent received is not in the trading account because it does not result from its main trading activities. It is, of course, on the credit side, just like other revenues.

The order of the expense items is not very critical, although it seems sensible to start with the most important. Often, expenses are organized into groups (e.g. 'administrative', 'finance' and 'marketing'). Consistency from year to year will make comparisons easier. These issues are examined at greater length in chapter 6. Note that the heading of the account includes the words 'for the period ending'. This emphasizes the fact that the income statement deals with flows over time. The wording is often 'for the year ending', 'for the quarter ending', and so on.

Inventory

During the year it is usual for no entries to be made in the inventory account. The business would be well advised to keep records of inventory movements and levels, but these will not be part of the double-entry system. The inventory account is only needed at the end of the accounting period, which is naturally the beginning of the next. Let us assume that a business has been left €2,000 of inventory from the previous year. Therefore, at the start of the year the inventory account appears as in Figure 2A.12.

Figure 2A.12 Inventory account

Inventory account (€)

Opening inventory	2,000	

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At the end of the year, the inventory may be valued at €5,500. The accounting entries to record (a) the removal of the old inventory, and (b) the arrival of the new inventory figure are:

(a) trading a/c *debit* 2,000; inventory a/c *credit* 2,000; and
(b) inventory a/c *debit* 5,500; trading a/c *credit* 5,500.

This will give the asterisked entries of Figure 2A.13.

Figure 2A.13 Inventory and trading accounts

Inventory account (€)			
Opening	2,000	Trading a/c	*2,000
	2,000		2,000
Closing	*5,500		

Trading account (€)			
Opening inventory	*2,000	Closing inventory	*5,500

The normal presentation, as in the previous trading account, is different from this because it makes for better presentation to show the closing inventory as a negative figure on the left rather than as a positive figure on the right. It should be very clear by now that in all these manipulations we are adhering not to naturally occurring laws that have been discovered but to conventions that have been invented and adopted because they work well.

The balance sheet

The observant reader may have noticed that the process of transferring various items of revenue and expense from their accounts to the income statement has left a number of accounts with balances remaining on them. These accounts are asset, liability or capital accounts (including the profit and loss account, which now also has a balance remaining). The total of all the credit balances should still equal the total of all the debit balances because double entry has been maintained throughout, even in the income statement. When all the balances are collected together on a balance sheet (or sheet of balances), we have a picture of what is owned by and owed by the business at that moment in time.

The debit or credit balances on the asset, liability or capital accounts are *not being transferred* to the balance sheet; they are carried forward to the next period, as indeed are the real assets and liabilities that they represent. The balances are merely *recorded* on a balance sheet in order to show the financial position of the business at the end of the accounting period. That is, the balance sheet represents stocks, not flows. Therefore, it will have '*as at* December X3', for example, in its title.

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Exercises

Feedback on the first two of these exercises is given in Appendix E.

2.1 The information in Table 2.22 relates to enterprise F, which started business on 1 January 20X3 when €150,000 was paid in as capital.

Table 2.22 Financial statistics for F

	31 Dec. 20X3 (€)	*31 Dec. 20X4* (€)
Cash at bank	19,000	36,000
Inventory of goods	32,000	29,000
Shop	135,000	135,000
Wages owed to staff	800	750
Amounts owed to supplier	26,500	21,250
Amounts owed by customers	35,000	34,000
Loans	50,000	50,000
Cash	500	2,000
Delivery vans	10,000	10,000

(a) Convert the above information into balance sheets at the end of the two years shown. What is then revealed as the missing item?

(b) What conclusion can you draw about the performance of F during 20X3 and 20X4?

(c) Would your conclusion be affected if you knew that the enterprise had paid €15,000 to the owner during 20X3?

(d) Does the figure for delivery vans at 31 December 20X4 surprise you? If so, why?

2.2 Company G has a hardware business. The balance sheet at the beginning of the financial year showed the position in Table 2.23.

Table 2.23 Balance sheet for G

		(a)	(b)	(c)	(d)	(e)	(f)	(g)
Shares	50,000							
Profit	7,000							
Payables	12,000							
	69,000							
Premises	20,000							
Equipment	9,000							
Vehicle	7,000							
Inventory	15,500							
Receivables	2,500							
Bank	14,700							
Cash	300							
	69,000							

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Show the adjustments, in the columns provided, for each of the following transactions:

(a) Goods were sold for €4,000 (cash sales €3,000, credit sales €1,000) which were included in the inventory at €2,800.
(b) An invoice for van expenses of €400 was received and paid immediately by cheque.
(c) Cheques of €8,000 were written and sent to creditors (payables). The €3,000 from cash sales was paid into the bank.
(d) The vehicle was sold at net book value for €7,000 cash, which was paid into the bank immediately.
(e) Cash €500 and cheques €2,000 were received from debtors (receivables).
(f) Office equipment (recorded in the books at €400) was sold for €700 cash.
(g) Company G then announced that it would pay €1,000 to the owners in one month's time, after the balance sheet for the year had been finalized.

2.3 Kings Cross Co.

	€		€
Land and buildings	110,000	Share capital	150,000
Machinery	50,000	Retained profits	5,000
Vehicles	25,000	Loans (10%)	20,000
Inventory at end of the year	30,000	Creditors	50,000
Debtors	35,000		
Cash at bank	10,000		
	260,000		225,000
Cost of goods sold	90,000	Sales	160,000
Wages	20,000		
Rent, insurance, sundry expenses	15,000		
	125,000		160,000

The above information has been taken from the company's books as at 31 December 20X4, but the following have not yet been allowed for:

(a) Rent owing but not yet paid amounting to €1,000.
(b) Insurance paid includes €3,000 which relates to next year.
(c) Audit fees not yet included and not yet paid are €1,500.
(d) Machinery and vehicles are to be depreciated by 10%.
(e) Land and buildings has been revalued at €150,000.
(f) Interest on the loans has not yet been paid.
(g) A dividend is to be proposed of 50% of the year's profits.

Record the appropriate adjustments on the quadrant and draw up the balance sheet and income statement.

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2.4 Kings Happy Co.

	€
Sales	147,500
Land and Buildings	60,000
Plant and machinery	40,000
Purchases	50,000
Wages and salaries	41,000
Salesmen's commission	6,000
Vehicles	30,000
Share capital	150,000
Inventory at start of year	20,000
Debtors	20,000
Rent, insurances, sundry expenses	8,500
Cash discounts allowed	1,500
Shares in listed company	40,000
Cash at bank and in hand	25,500
Creditors	37,000
Retained profits	6,000
Dividends received from listed investment	2,000

The above information has been taken from the company's books as at 31 December 20X4, but the following has not been allowed for:

(a) Inventory at the end of the year is €25,000.
(b) Audit fees owing amounted to €500.
(c) Machinery and vehicles are to be depreciated by 10% and 20% respectively.
(d) A dividend is to be proposed of 20% of the share capital.

Satisfy yourself that total sources equal total applications before making necessary adjustments for (a)–(d). Then draw up the balance sheet and income statement.

2.5 Kingsad Co.

	€
Land and Buildings	100,000
Share capital	100,000
Plant and machinery	50,000
Retained profits at 1 January 20X4	46,000
Purchases	70,000
Sales	150,000
Inventory at 1 January 20X4	30,000
Wages and salaries	40,000
Sales returned by customers as unacceptable	1,000
General expenses	10,000
Debtors	25,000
Creditors	30,000

This information has been taken from the company's books as at 31 December 20X4, but the information below has not been allowed for:

(a) Inventory at 31 December 20X4 is €20,000.
(b) Plant and machinery is to be depreciated by 10%.
(c) Land and buildings is to be revalued to €150,000.

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(d) General expenses includes an insurance charge of €1,000 covering the period 1 July 20X4 to 30 June 20X5.
(e) A debtor for €1,000 has gone bankrupt.
(f) A dividend of €5,000 is to be proposed.

Using the quadrant format, incorporate the additional information, and prepare the closing balance sheet and income statement.

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3

Frameworks and concepts

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- describe the links between the fundamentals of chapter 2 and the financial reporting system used under IFRS;
- explain the main purposes of financial reporting under IFRS;
- outline some fundamental concepts underlying all financial reporting;
- define the concepts to be found in the IASB's Framework;
- explain the various levels of concepts, their interrelationship and some inconsistencies.

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3.1 Introduction

Activity 3.A Before you start reading this chapter, try to think of all the different types of people who might use balance sheets and income statements, and why. Draw up a list.

Feedback Financial statements might be used for various purposes by many users, including:

- the owners of an enterprise (to assess the performance of their investment and of the managers);
- investors who are thinking of becoming owners (to decide whether to invest);
- lenders, including the bank (to decide whether to lend);
- managers of the enterprise (to assess performance, and to make financial decisions);
- suppliers (to assess whether they will be paid);
- customers (to assess whether the company will continue);
- tax authorities (as a basis for the calculation of taxable profits);
- employees (to assess the stability and prospects of their employer);
- competitors (to assess the strength of their competition).

Accounting has evolved over thousands of years without any clearly articulated purpose, or at least without any single purpose. Accounting has been used to record debts due from customers, calculate taxable income, calculate the split of profit amongst owners, help management to decide where to expand business, and so on. For different users and uses, different types and amounts and frequencies of accounting might be useful.

In the previous chapter some fundamentals of accounting were examined, including the recording of transactions and the preparation of periodic financial statements. These fundamentals are relevant for any of the above purposes. However, this book is particularly concerned with financial reporting published by commercial enterprises for users who are external to the enterprise, particularly investors. Although there are several variations around the world, one general type of accounting has gradually come to be accepted internationally for this purpose, particularly for large commercial companies. This dominant type of accounting is that set out in International Financial Reporting Standards. The rules of this type of accounting are based on a published 'conceptual framework' of concepts which can be summarized as follows:

- the main users of financial statements are investors;
- the investors' main objective is to make economic decisions;
- this requires the prediction of future cash flows;
- so, financial reporting should provide understandable, relevant, reliable and comparable information for this purpose.

This Framework makes it clear that the primary purpose of financial reporting under this system is *not* to help management to make decisions, or to calculate

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taxable income, or to calculate what is legally and prudently distributable to the owners, or to check up on what the managers have done with the owners' money. All these uses for accounting are perfectly reasonable and some systems of accounting are particularly designed to achieve these purposes. In certain countries the bias seems to be towards some of these uses, as explained in chapter 5. For example, if the main purpose of accounting were to calculate prudently distributable income, great emphasis would be placed on never overstating any assets or income (see 'Prudence, or conservatism' in Section 3.3.3 below). Or, if the main purpose of accounting were to check up on the stewardship of managers, then some emphasis would be placed on recording assets at what had been paid for them. There are plenty of examples of such influences on current accounting practices. Even in IFRSs, many hints of other objectives of accounting can be detected, particularly the last use in the list above. Also, accounting information prepared specifically for one purpose could nevertheless be used for others. However, the main purpose of assisting economic decisions (see particularly paragraphs 10–14 of the IASB's Framework), as outlined above, is now assumed in the development of IFRSs.

Such a framework of ideas was first published in final form by the US standard setter (the Financial Accounting Standards Board, FASB) from the late 1970s, and was followed in most respects by the then International Accounting Standards Committee (IASC) in 1989. Several other English-speaking countries have very similar frameworks. In most countries other than these, there is no explicit detailed framework, particularly where accounting rules are largely confined to laws. This book will concentrate on the IASB's version of the conceptual framework.

Why it matters

- *Unless you decide on the intended users and uses of accounting it is unlikely that the accounting system will be designed to be useful.*
- *In most countries, there is no explicit framework. In many countries, other purposes than helping investors to make economic decisions seem to be the main focus of accounting. For these reasons, accounting is performed differently from place to place, and financial statements cannot be easily compared.*

The IASB's and other frameworks also contain examination of the five 'elements' of financial statements: assets, liabilities, equity, revenues and expenses. These were looked at in chapter 2, where it was noted that primacy is given to the definitions of 'asset' and 'liability'.

Activity 3.B Consider who is expected to make direct use of a conceptual framework.

Feedback A framework is not itself an accounting standard, and its main purpose is to guide the standard setters when they are writing or revising accounting standards. However, it should also be used as general guidance by those preparing or auditing financial statements. Of more direct effect is International Accounting Standard No. 1 (IAS 1, *Presentation of Financial Statements*). This applies the Framework's ideas for use by accountants when preparing financial statements.

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3.2 Underlying concepts

Before we get to the IASB's concepts, there are some others that are so taken for granted that they are not mentioned in the IASB documents. These conventions include the following:

3.2.1 Business entity

This convention holds that an enterprise has an identity and existence distinct from its owners. To the accountant, whatever the legal position, the business and the owner(s) are considered completely separately. Thus the accountant can speak of the owner having claims against the enterprise. Think of the basic balance sheet as in Table 3.1.

Table 3.1 The basic balance sheet

Assets	Equity Liabilities
Total	Total

A properly prepared balance sheet can always be relied upon to balance. This is because equity is the balancing figure, as discussed in chapter 2. The equity is the amount of wealth invested in the enterprise by the owner, or the amount of money obtained by the enterprise from the owner, or the amount the enterprise 'owes' the owner. None of these three statements could be made unless the accountant is treating the enterprise as separate from the owner. Another balance sheet could also be drawn up, namely for the owner as an individual. This would contain a record of the owner's investment in the enterprise, shown as one of the owner's personal assets.

3.2.2 Accounting period

This very simple convention recognizes that profit occurs over time, and we cannot usefully speak of profit until we define the length of the period. The maximum length normally used is one year. This does not, of course, preclude the preparation of statements for shorter periods as well, although a formal period for published statements is often one year. Increasingly, large businesses are reporting externally on a half-yearly or quarterly interim basis, and they may be reporting internally on a monthly basis.

Why it matters *The activities of most businesses are designed to carry on indefinitely. However, users of accounting information need regular reports on progress. So, accountants have to make cut-offs at annual or more frequent intervals. Many accounting problems arise from trying to give an account of unfinished operations.*

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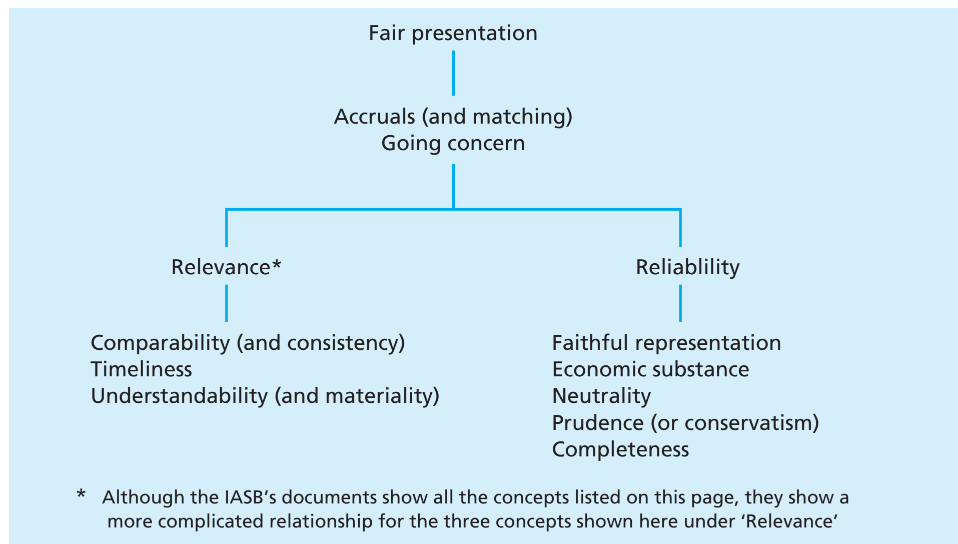
3.3 The IASB's concepts

3.3.1 Overall objective

A large number of concepts, assumptions, etc. can be found in the IASB Framework and IAS 1, but they could be summarized as in Figure 3.1, although the IASB's documents do not list them so neatly into two columns. The overall objective is to give a fair presentation of the state of affairs and performance of a business, so that users of financial statements can make good decisions (IAS 1, paragraphs 5 and 10). In order to achieve this, it is important that the information presented is relevant and reliable. Most of the other concepts can be explained under those two headings. The Framework suggests that, in the IASB context, fair presentation could also be referred to as giving 'a true and fair view', which is the fundamental requirement in the European Union (and chapter 5 deals with this in more detail).

Figure 3.1 IASB's concepts



3.3.2 Underlying assumptions

Accruals, including matching

The essence of the accruals convention is that transactions should be recognized when they occur, not by reference to the date of the *receipt* or *payment* of cash. Also, the process of profit calculation consists of relating together (matching) the revenues with the expenses; it is not concerned with relating together cash receipts and cash payments. Both ways of calculating may be relevant for prediction of the future. The balance sheet and the income statement are based on the accruals convention, but the cash flow statement is not.

Let us take some simple examples of the application of the accruals basis to revenues and expenses. First, in some cases, cash receipts of last year may be

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revenues of this year. If a business rents out some premises and asks for rent in advance, there may be some rent paid to the business last year on behalf of this year. A social club may have received some of this year's subscriptions during last year. In cases like this, cash is received in the accounting year before the one in which it is recognized as revenue. At the time of its receipt there were the effects shown in Figure 3.2.

Figure 3.2 Effects of accruals (1)

During last year

+ Cash	+ Revenues received early (shown as payables/creditors)

This year

	+ Profit (revenue) – Revenues received early

There may be examples of reverse situations to those above. That is, at the end of the year there may be rents not yet received that relate to the year, or credit sales not yet paid for by customers. When these are paid during the following year, the cash receipts of that later year will result from the revenues of this year. At the end of this year there will be cash due, as in Figure 3.3.

Figure 3.3 Effects of accruals (2)

This year

+ Receipts due (shown as receivables/debtors)	+ Profit (revenue)

During next year

– Receipts due + Cash	

Similarly, payments of last year may be expenses of this year. Examples of this are rents or insurance premiums paid last year by a business to cover part of this year. This gives rise to effects as shown in Figure 3.4.

The reverse of this is where expenses of this year are not paid until next year. This gives rise to accrued expenses, shown as a credit balance in this year's balance sheet. These points are illustrated in a double-entry context in the Annex to this chapter.

As noted above, the relating together of revenues and expenses is called 'matching'. For example, let us look at the treatment of the purchase of an asset, such as a machine, which lasts for more than one accounting period. It might be paid for immediately but be used in production to earn revenues for ten years. In order to match the expense with the revenue, the expense of the asset is charged over the

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Figure 3.4 Effects of accruals (3)

During last year

+ Prepayments − Cash	

This year

− Prepayments	− Profit (expense)

ten years. This expense is called 'depreciation'; it is a charge for the wearing out of the asset. There is further examination of the recognition of revenue and of depreciation in chapters 8 and 9.

IAS 1 (paragraph 26) describes the accruals basis of accounting, but notes that 'the application of the matching concept does not allow the recognition of items in the balance sheet which do not meet the definition of assets or liabilities'. This confirms the point made in chapter 2 that the IASB Framework gives primacy to the definition of asset/liability rather than revenue/expense.

Going concern

This important convention states that, in the absence of evidence to the contrary, it is assumed that the business will continue for the foreseeable future. This convention has a major influence on the assumptions made when evaluating particular items in the balance sheet. The convention allows the assumption that inventory will eventually be sold in the normal course of business, i.e. at normal selling prices. It allows for the idea of depreciation. If the enterprise depreciates an item of plant over ten years, then it is assuming that the plant will have a useful life *to the enterprise* of ten years. This assumption can only be made by first assuming that the enterprise will continue in operation for at least ten years.

3.3.3 Relevance

It is clear that, in order to be useful, information must be relevant to its purpose, which is seen to be economic decision making. This requires predictions of future cash flows, which can be based partly on relevant past and present information in statements such as the balance sheet and income statement. Relevance is related to the following concepts.

Comparability, including consistency

Financial information is unlikely to be relevant unless it can be compared across periods and across companies. This requires as much consistency as possible in the use of methods of measuring and presenting numbers; it requires also that any changes in these methods should be disclosed.

Timeliness

Relevance is increased if information is up to date. This raises a common problem

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that there may be an inconsistency between concepts. For example, the need to ensure reliability of information may slow down its publication. The regulators of financial reporting in many countries set time limits for the publication of financial statements and require reporting more than once a year.

Understandability, including materiality

Clearly, information cannot be relevant unless it can be understood. However, in a complex world, information may have to be complex to achieve a fair presentation. The rule-makers and preparers are allowed to assume that the important users are educated and intelligent.

Connected with this is the concept of materiality, which implies that insignificant items should not be given the same emphasis as significant items. The insignificant items are by definition unlikely to influence decisions or provide useful information to decision-makers, but they may well cause complication and confusion to the user of accounts. Immaterial items do not need separate disclosure and may not need to be accounted for strictly correctly. What is 'insignificant' in any particular context may be a highly subjective decision.

3.3.4 Reliability

For information to be useful, it must be possible for users to depend on it. The several concepts below are related to this, although some of them are also clearly related to relevance.

Faithful representation

The readers of financial statements should not be misled by the contents of the statements. Transactions, assets and liabilities should be shown in such a way as to represent as well as possible what underlies them. For example, a balance sheet should not show an item under the heading 'assets' unless it meets the definition of an asset. This assumes that readers have a good grasp of the concepts used.

Economic substance

This concept is related to faithful representation. It is sometimes expressed as showing the economic substance of transactions rather than their legal form. However, this is too simple. The exact economic substance will rest on the exact legal arrangements. The issue here is to see through any superficial legal or other arrangements to the real economic effects.

To take an example, suppose that an enterprise signs a lease that commits it to paying rentals to use a machine for the whole of the expected life of the machine. This is very similar to borrowing money and buying a machine, in the sense that the enterprise (under either arrangement) has control over the operational use of the asset and has an obligation to pay money. The legal form is that the enterprise does not own the machine or have any outstanding unpaid debt owing, but the economic substance is that it has an asset and a liability.

Similarly, if an enterprise sold a machine to a finance company and immediately leased it back for most of its life, the legal form is that there has been a sale but the substance is that the enterprise still has the asset.

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Neutrality

To be reliable, information needs to be free from bias; otherwise the prediction of the future will be warped.

Prudence or conservatism

The most famous bias in accounting is prudence, or conservatism. There is still some room for this, despite the above requirement for neutrality.

Full-blown conservatism can still be found in some countries in order to protect certain users (including creditors) from the risk of making financial statements look too good, particularly given the excessive optimism of some businessmen. Recognizing that a number of estimates are involved in accounting, an accountant, according to this convention, should ensure the avoidance of overstatement by deliberately setting out to achieve a degree of understatement. This requires that similar items, some of which are positive and some of which are negative, should not be treated symmetrically.

In the IASB Framework, prudence is not supposed to be this overridingly strong. It is instead the exercise of a degree of caution in the context of uncertainty.

Completeness

Information needs to be as complete as possible within the constraints of materiality. Any important omissions would cause the financial statements to be misleading. However, the regulators (the standard setters in the case of the IASB) should bear in mind that some demands for information may be too costly to an enterprise. The benefits of information should outweigh the costs of producing it.

Why it matters *If you try to be neutral, you may overstate assets or profits, thereby misleading lenders and others about how strong the business is. If, instead, you try to be prudent, you will almost certainly understate assets and profits, so investors may make the wrong decisions by selling shares too soon or not buying enough. This is one of the many examples of the requirement for judgement in accounting. It is an art, not a mechanical numerical exercise. That makes it interesting.*

3.4 A hierarchy of concepts and some inconsistencies

There are several levels of concept. These could be summarized as:

- **Level A.** The ultimate purpose of accounting, according to the IASB: to give a fair presentation of information in order to help users to make economic decisions.
- **Level B.** A series of derivative concepts and conventions related to relevance and reliability.
- **Level C.** Detailed technical rules of how to recognize, measure and present assets, liabilities, equity, revenues, expenses, cash flows and various related disclosures. For example, a Level C rule would be that the valuation of land and buildings must be based on their original cost not on their current value.

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One problem with Level B has already been noted above when examining the various concepts. That is, there are inconsistencies. For example:

1. **Prudence and going concern**. The going concern convention assumes that the firm will 'keep going', e.g. that it will not be forced out of business by competition or bankruptcy. This may be a likely and rational assumption, but it is not necessarily prudent – indeed, in certain circumstances it could be decidedly risky.
2. **Prudence and matching**. The matching convention, building on the going concern convention, allows us to carry forward assets into future periods on the grounds that they will be used profitably later. This clearly makes major assumptions about the future that may not be at all prudent. The tension between these two conventions is one of the major problems of accounting practice, and it underlies many of the more difficult issues discussed in Part 2 of this book.
3. **Prudence and neutrality**. Neutrality implies freedom from personal opinion – freedom from bias. However, prudence, quite explicitly, implies that the accountant *should* bias information in a certain direction.

Activity 3.C A more general problem than the inconsistency of various concepts is an overall tension between relevance and reliability. Consider the best way to arrive at a balance sheet value for assets, such as land and buildings. Which methods of valuation might be most relevant and which most reliable?

Feedback Some form of current value (e.g. today's selling price or replacement cost) might provide more relevant information than the cost of several years ago. However, all these values are estimates, so that original cost might be more reliably measured.

Since the detailed rules at Level C are based on somewhat vague and potentially inconsistent concepts at Levels A and B, there is plenty of scope for different rules in different countries and at different times. Of course, this diversity is even more likely where different frameworks are in use or where there is no explicit framework. In many systems, including IAS, some of the detailed rules were made before the frameworks were agreed upon. As a result, some IASB standards are not consistent with the IASB framework (e.g. see section 9.4 on leasing).

In IASs, the Level A objective (fair presentation) is to be used for the following purposes:

- to guide standard setters when making Level C rules in individual accounting standards;
- to guide preparers and auditors of financial statements in interpreting the Level B concepts and the Level C rules;
- to guide preparers and auditors in the absence of a relevant Level C rule;
- to require preparers sometimes to make extra disclosures in order to achieve a fair presentation;
- in exceptional circumstances, to require preparers to depart from Level C rules in order to achieve a fair presentation.

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The last of these (the 'override') is controversial. Philosophically, it makes sense to be able to override detailed rules in pursuit of the ultimate objective. However, given that that objective is vague, it might allow preparers to evade rules that they do not like. This issue is taken further in chapter 5.

In member states of the EU and in some other European countries, laws are based on the EU Fourth Directive, which contains a similar Level A objective, somewhat similar Level B concepts, several Level C rules (including many options), and an override.

SUMMARY

- This chapter has pointed out that the fundamentals of accounting could be applied in a number of ways, depending on the purposes of the accounting. This book is concerned with *external* financial reporting not that for management, but even then various users and uses are possible. The type of accounting examined here is now the predominant sort used by most large companies in the world. Its main purpose can be seen in the IASB Framework: to enable investors to predict cash flows in order to make economic decisions.
- Present accounting (even that designed for investors) contains vestiges of other purposes, such as creditor-protection or accountability of management.
- Some underlying concepts are common to most reporting: separating the entity from the owner; recording two aspects of each transaction; and splitting up operations into regular time periods.
- The IAS system has several levels of concepts:
  - the overall objective of fair presentation;
  - a second level of concepts, which could be summarized as the need for relevance and reliability; and
  - a third level of detailed rules, which are generally found in individual accounting standards but are based on the IASB Framework.
- The first two levels are somewhat vague and contain inconsistencies. In particular, there is often a need to trade some reliability in order to gain some extra relevance.
- The overall objective should override the other levels of concepts and rules. This certainly applies to the standard setters, although it may be dangerous to allow individual companies to use such a vague excuse to break the rules.

References and research

The most relevant IASB literature on the issues of this chapter is:

- the Framework
- IAS 1 (revised 2003): *Presentation of Financial Statements*

Some research papers of particular relevance are:

- D. Alexander, 'A benchmark for the adequacy of published financial statements', *Accounting and Business Research*, Vol. 29, No. 3, 1999.
- L. Evans and C. Nobes, 'Some mysteries relating to the prudence principle in the Fourth Directive and in German and British Law', *European Accounting Review*, Vol. 5, No. 2, 1996.

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? Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

3.1 According to the IASB's Framework, the main purpose of financing reporting is to:

(a) Calculate taxable income.
(b) Enable investors to make economic decisions.
(c) Calculate prudently distributable profit.
(d) Help the managers to run the business.

3.2 In the IASB's Framework:

(a) Prudence overrides relevance.
(b) Relevance overrides reliability.
(c) Relevance and reliability must be maximized, with a trade-off when they conflict.
(d) Reliability overrides relevance.

3.3 The going concern convention states that:

(a) All enterprises must be accounted for as going concerns.
(b) Accounting only needs to be done for going concerns.
(c) Predictions cannot be used when preparing financial statements.
(d) There is a presumption that an enterprise is a going concern, but the convention must be abandoned when it is inappropriate.

3.4 The convention of consistency refers to consistent use of accounting principles:

(a) Among firms.
(b) Across accounting periods.
(c) Throughout the accounting period.
(d) Within industries.

3.5 Mr. Bod has paid rent of €2,400 for the period 1 April 20X1 to 31 March 20X2. His first accounts are drawn up for the nine months ended 31 December 20X1. His first accounts should show:

(a) A rent expense of €2,400.
(b) A rent expense of €1,800 and a prepayment of €600.
(c) A rent expense of €1,800 and accrued expenses of €600.
(c) A rent expense of €2,400 with an explanatory note that this is the usual charge for twelve months.

3.6 The charging of depreciation expense over the life of an asset rather than the immediate full expensing of its cost is an example of:

(a) Consistency.
(b) Matching.
(c) Prudence.
(d) Reliability.

? Exercises

Feedback on the first two of these exercises is given in Appendix E.

3.1 (a) Which accounting conventions/concepts do you regard as most important in helping preparers and auditors of financial statements to do their work, and why?

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(b) Which accounting conventions do you regard as most useful from the viewpoint of the readers of financial statements, and why?
(c) Explain any difference between your answers to (a) and (b) above.

3.2 'Substance over form is a recipe for failing to achieve comparability between accounting statements for different businesses.' Discuss.

3.3 What various purposes might there be for accounting? Which does the IASB focus particularly on?

3.4 Equity investors are major users of financial statements. Identify the general nature of the 'information needs' of this group of users. Describe the likely specific uses of company financial information by investors, and give examples of information that may be relevant to each of these uses.

3.5 'Neutrality is about freedom from bias. Prudence is a bias. It is not possible to embrace both conventions in one coherent framework.' Discuss.

3.6 To what extent is the search for relevance of financial information hampered by the need for reliability?

3.7 On 21 December 20X1, your client paid €10,000 for an advertising campaign. The advertisements will be heard on local radio stations between 1 January and 31 January 20X2. Your client believes that, as a result, sales will increase by 60 per cent in 20X2 (over 20X1 levels) and by 40 per cent in 20X3 (over 20X1 levels). There will be no further benefits.

Write a memorandum to your client explaining your views on how this item should be treated in the year-end financial statements for each of the three years. Your answer should include explicit reference to relevant traditional accounting conventions, and to the requirements of users of published financial statements.

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ANNEX More on double entry

This Annex takes further the material in the Annex to chapter 2. It deals with some aspects of the accruals basis of accounting, and then with the 'trial balance'.

Accruals and prepayments

Set out below there are two accruals and two prepayments relating to one particular property of a business whose accounting period ends on 31 December.

1. Rent is paid half-yearly in arrears (€500 per half-year). Last payment was 30 September; next payment is due 31 March.
2. The telephone bill is paid quarterly. Next bill is expected 31 January (always about €120 per quarter).
3. Property taxes are paid half-yearly in advance (€200 per half-year). Last payment was 1 October; next payment is due 1 April.
4. The yearly insurance premium of €180 is paid on 1 November each year.

It has been explained that, in order to arrive at a profit figure, the payments *relating to* a period (i.e. the expenses), not the payments *made in* a period, are those that should be included. This is the accruals basis of accounting. Let us imagine that the business started on 1 January with several properties. Without taking the above points into account, the total bills paid in the year may have been:

Rent	1,500
Telephone	800
Property tax	1,000
Insurance	500

The above four points imply that, at 31 December:

(a) rent is in arrears by €250;
(b) the telephone bill is in arrears by €80;
(c) property taxes are paid in advance by €100; and
(d) insurance is paid in advance by €150.

The expenses accounts for the year ended 31 December, taking all this into account, will look like Figure 3A.1.

Thus, the actual charges in the profit and loss account are increased by amounts owing that relate to the present accounting year and decreased by amounts paid on behalf of next year. Notice that next year's accounts have already been credited or debited with the appropriate amounts because of double entry. For example, when the €500 rent bill arrives and is paid at the end of March next year and debited to the rent account (the cash account being credited with €500 at the same time), the account will show a net charge of €250 (i.e. €500–€250) so far. This is correct for one quarter (see Figure 3A.2).

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Figure 3A.1 Expenses accounts

Rent account

Cash	1,500	Profit and loss a/c	1,750
Accruals c/d	250		
	1,750		1,750
		Accruals b/d	250

Telephone account

Cash	800	Profit and loss a/c	880
Accruals c/d	80		
	880		880
		Accruals b/d	80

Property taxes account

Cash	1,000	Prepayment c/d	100
		Profit and loss a/c	900
	1,000		1,000
Prepayment b/d	100		

Insurance account

Cash	500	Prepayment c/d	150
		Profit and loss a/c	350
	500		500
Prepayment b/d	150		

Profit and loss account

Rent	1,750	Gross profit	x,xxx
Property tax	900		
Telephone	880		
Insurance	350		

Figure 3A.2 The Rent account (next year)

Rent account

Cash	500	Accruals b/d	250

The trial balance

At the end of an accounting year (or at any time during the year when a balance sheet or income statement is needed), the accounts in a manual system must be balanced. The balances are then listed with debits in one column and credits in another (this procedure being called extracting a trial balance), before the balances are transferred to the income statement or recorded on the balance sheet. If the totals of the columns do not agree, this signifies an error (or errors) – for example:

1. *errors of posting*, where one part of the double entry is lost or recorded on the wrong side;
2. *arithmetic errors*, where the addition and balancing processes are inaccurate;
3. *omission of an account*, where the balance on an account is not recorded in the trial balance;

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4. *misreading a balance*, where the wrong amount is transferred to the trial balance, or the correct balance written to the wrong column.

It is clear that these types of error should not arise in a computer system. A system should reject partial entries, which do not maintain the double-entry system, and all the calculations are automatic. However, a trial balance is still an essential step in the process of producing an income statement and balance sheet, as computers (and their operators) are not infallible. An imbalance must be immediately investigated as it indicates a breakdown of the accounting system.

Table 3A.1 contains a possible trial balance extracted from the books of the business of Great Dane on 31 December 20X9. Any errors revealed by imbalance have already been corrected in the trial balance. A trial balance that balances is not a guarantee that there are no errors, and checks have to be built in to an accounting system to try to avoid errors.

Table 3A.1 Trial balance extracted from the books of Great Dane as at 31.12.20X9 (€)

Item	*Debits*	*Credits*
Capital		20,000
Land	10,000	
Fixtures and fittings at cost	4,500	
Depreciation provision at 1.1.20X9		900
Opening inventory at 1.1.20X9	4,800	
Purchases	11,600	
Sales		16,500
Drawings by owner	2,400	
Receivables	2,100	
Payables		1,600
Wages and salaries	800	
Lighting and heating	100	
Rent	300	
Miscellaneous expenses	200	
Cash and bank balances	2,200	
	39,000	39,000

At the end of the year there will be a variety of entries that are necessary before the accounts can be properly drawn up. In the case of Great Dane, the year-end entries might result from the following information:

1. Ten per cent depreciation for the year should be provided on the cost of fixtures and fittings.
2. Rent has been paid in advance to the extent of €50.
3. Specific bad debts of €100 are to be written off.
4. An allowance for future bad debts of 10 per cent of receivables is to be set up for the first time.
5. Closing inventory is valued at €5,000.

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Table 3A.2 Trial balance of Great Dane as at 31.12.20X9 after adjustments (€)

			Adjustments already made	
Item	*Debits*	*Credits*	*Debits*	*Credits*
Capital		20,000		
Land	10,000			
Fixtures and fittings	4,500			
*Depreciation provision at 31.12.20X9		1,350		+450
✓*Depreciation charge	450		+450	
✓Opening inventory (in trading account)	4,800			
✓*Closing inventory (in trading account)		5,000		+5,000
*Closing inventory (in asset account)	5,000		+5,000	
✓Purchases	11,600			
✓Sales		16,500		
Drawings	2,400			
*Receivables	2,000		−100	
Payables		1,600		
✓Wages and salaries	800			
✓Lighting and heating	100			
✓*Rent	250		−50	
✓*Rent (opening balance for next year)	50		+50	
✓*Bad debts	300		{ + 100 + 200	
*Allowance for bad debts		200		+200
✓Miscellaneous expenses	200			
Cash and bank balance	2,200			
	44,650	44,650	+5,650	+5,650

These entries can now be added to the previous trial balance of Table 3A.1. The result is shown as Table 3A.2, where the new entries have affected the asterisked balances. The adjustments that have been made are shown in the right-hand columns. The trial balance still works. The next stage is to transfer all the revenue and expense balances to an income statement by closing the accounts, using the double-entry method. As the balances are transferred, the record in the trial balance can be ticked off. (The revenue and expense balances have already been ticked in Table 3A.2.) In this case the account in Table 3A.3 will result, although in practice in many countries income statements are presented in a different way (see chapter 6).

All the remaining unticked balances in the trial balance (Table 3A.2) will be asset, liability or capital balances. These can now be recorded on the balance sheet. As noted in chapter 2, the balance sheet is not part of the double-entry system; therefore, these unticked accounts are not closed down, nor are their balances transferred.

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Table 3A.3 Income statement of Great Dane for the year ending 31.12.20X9 (€)

Opening inventory	4,800	Sales	16,500
Purchases	11,600		
	16,400		
less Closing inventory	5,000		
	11,400		
Gross profit c/d	5,100		
	16,500		16,500
Wages and salaries	800	Gross profit b/d	5,100
Lighting and heating	100		
Rent	250		
Depreciation	450		
Bad debts	300		
Miscellaneous expenses	200		
	2,100		
Net profit c/d	3,000		
	5,100		5,100
		Net profit b/d	3,000

When all the balances in the trial balance have been used, the balance sheet in Table 3A.4 will result. Double entry has ensured that it balances.

Table 3A.4 Balance sheet of Great Dane as at 31.12.20X9 (€)

	Cost	*Cumulative depreciation*	*Net book value*		
Fixed assets:				Owner's equity:	
Land	10,000		10,000	Capital (at 1.1.20X9)	20,000
				Net profit for the year	3,000
					23,000
Fixtures and fittings	4,500	1,350	3,150		
	14,500	1,350	13,150		
				less Drawings	2,400
				Capital (at 31.12.20X9)	20,600
Current assets:				Current liabilities:	
Inventory		5,000		Payables	1,600
Receivables	2,000				
less Allowances	200	1,800			
Prepaid expenses		50			
Cash at bank		2,200	9,050		
			22,200		22,200

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? Exercises on double entry

Feedback on the first two of these exercises is given in Appendix E.

3A.1 Set out in Table 3A.5 is a summary of the payments for rent and property taxes made by a retailer for his business premises.

Table 3A.5 Payments for rent and property taxes (€)

Year 20X0		
13 Nov.	Property taxes paid for 6 months to 31 March 20X1	160
21 Dec.	Rent paid for 3 months to 31 December 20X0	100
Year 20X1		
31 March	Rent paid for 3 months to 31 March 20X1	100
22 April	Property taxes paid for 6 months to 30 September 20X1	180
2 July	Rent paid for 3 months to 30 June 20X1	100
4 Oct.	Rent paid for 3 months to 30 September 20X1	100
5 Nov.	Property taxes paid for 6 months to 31 March 20X2	180
Year 20X2		
4 Jan.	Rent paid for 3 months to 31 December 20X1	100

Write up separate accounts for (a) rent and (b) property taxes for 20X1, showing within the accounts the amounts that should be entered in the income statement for the year ended 31 December 20X1. Show the appropriate entries in the balance sheet at that date.

3A.2 Set out in Table 3A.6 is the trial balance at 30 September 20X2 of company M.

Table 3A.6 Trial balance for M (€)

	Dr.	*Cr.*
Capital, 1 October 20X1	–	12,920
Office furniture	2,816	–
Payables	–	2,829
Bank overdraft	–	323
Land and buildings	7,700	–
Equipment	1,400	–
Vehicles	1,500	–
Inventory, 1 October 20X1	4,400	–
Receivables	2,926	–
Purchases	21,435	–
Sales	–	31,219
Rent received from sub-tenant	–	500
Wages	4,304	–
Insurances	274	–
Light and heat	185	–
Sundry administrative expenses	319	–
Selling expenses	532	–
	47,791	47,791

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The following additional information is to be taken into consideration:

(a) Balance owing for wages for the last few days of the accounting year is 95.
(b) Insurance premium prepaid is 32.
(c) The inventory at 30 September 20X2 is valued at 7,200.

Prepare an income statement and balance sheet for the financial year to 30 September 20X2, showing clearly in the statements the cost of goods sold and the gross profit.

3A.3 A. *Trader*

The following trial balance was extracted from the books of a trader, at 31 December 20X7 (in €).

Capital	–	24,447
Office furniture	2,148	–
Debtors and creditors	7,689	5,462
Sales	–	81,742
Purchases	62,101	–
Rent and property taxes	880	–
Lighting and heating	246	–
Salaries and wages	8,268	–
Inventory 31 December 20X7	9,274	–
Insurance	172	–
General expenses	933	–
Bank balance	1,582	–
Motor vans at cost	8,000	–
Motor expenses	1,108	–
Freehold premises at cost	10,000	–
Rent received	–	750
	112,401	112,401

The following matters are to be taken into account:

(a) Inventory at 31 December 20X7 was €9,884.
(b) Property taxes paid in advance at 31 December 20X7 were €40.
(c) Rent receivable due at 31 December 20X7 was €250.
(d) Lighting and heating due at 31 December 20X7 was €85.
(e) Included in the amount for insurance is an item of €82 for motor insurance, and this amount should be transferred to motor expenses.

Prepare an income statement for 20X7 and a balance sheet at 31 December 20X7.

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4

The regulation of accounting

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OBJECTIVES

After studying the chapter carefully, you should be able to:

- describe the various sources from which accounting rules can come;
- outline the two main types of legal system to be found in much of the world, and how this affects accounting;
- explain the different ways in which enterprises might be legally organized;
- give examples of the ways in which the regulation of accounting is arranged in various countries.

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4.1 Introduction: various ways to regulate accounting

This chapter is about how accounting can be regulated, about how it is regulated in particular countries, and about the different types of enterprises whose reporting is regulated.

The context here is mainly the regulation of the financial reports designed for those users who are outside the enterprise. On the whole, no regulation is appropriate for management accounting information. Enterprises choose what is most useful for themselves. Of course, the calculation of taxable profit for the tax authorities has to be regulated, but that is not considered in this book unless it directly affects financial reporting to other users, such as investors (see chapter 12).

In most countries, it is not thought appropriate to regulate bookkeeping in any detail, although there are generally requirements that orderly books should be kept so that auditors and tax authorities could investigate them where this seems necessary to confirm the contents of financial reports. In a few countries, such as Belgium and France, bookkeeping is regulated in detail, as is noted below.

Financial reporting could be regulated in a number of ways, including:

- legislation, such as Companies Acts and Commercial Codes;
- other rules issued by departments of government (such as a Ministry of Finance) or by committees operating under their control;
- rules from governmental regulators of stock exchanges;
- rules of stock exchanges;
- accounting guidelines or standards issued by committees of the accountancy profession;
- accounting guidelines or standards issued by independent private-sector bodies acting in the public interest.

The expression 'accounting standard' is used here to mean a document containing a series of instructions on a particular topic of financial reporting (e.g. how to value inventories), where the standard is written in the private (non-governmental) sector and is intended to be obeyed in full before an enterprise or an auditor can claim compliance with the system of rules of which the standards form part.

Section 4.2 looks at how legal systems differ around the world. Section 4.3 examines how the legal nature of enterprises can differ as they become larger and more complex. For financial reporting regulation, it is important to separate the creation of rules from their enforcement. For example, in the United States most accounting rules are to be found in accounting standards but the enforcement, for certain companies, comes from the stock exchange regulator. This example and others are examined in more detail in section 4.4; and the regulation of IASB standards is considered in section 4.5.

4.2 Legal systems

One of the reasons why accounting tends to be regulated in different ways in different countries is that the whole nature of the legal system differs

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internationally. Two main systems can be identified in the developed world: Roman codified law and common law. Most countries in continental Western Europe have a system of law that is based on the Roman *jus civile*, as compiled by Justinian in the sixth century AD and developed by European universities from the twelfth century. The word 'codified' may be associated with such a system; for example, commercial codes establish rules in detail for accounting and financial reporting. Both the nature of regulation and the type of detailed rules to be found in a country are affected. For example, in Germany, company accounting is to a large extent a branch of company law.

In France, Belgium, Spain, Portugal and Greece, much of the detail of accounting rules is found in 'accounting plans' (e.g. the French *plan comptable général*), which are documents under the control of government committees. One feature of most accounting plans is a chart of accounts, which contains a detailed structure of account codes for use in the double-entry bookkeeping systems of enterprises. The chart covers the origination of entries and leads through to financial statements. Such uniform (or standardized) accounting was invented in Germany in the early years of the twentieth century, and it has been used in several Western European countries. For example, the chart within the French plan is compulsory for tax purposes for French enterprises. Charts have also been used extensively in Eastern Europe.

In Italy, Germany and several of the other countries already mentioned, commercial codes contain many legal instructions on accounting. In many such countries, the codes date back to Napoleon, who adopted and adapted the Roman legal system. Japan introduced a commercial legal system similar to that of Germany in the second half of the nineteenth century. Systems of commercial law in Nordic countries bear a relationship to the Roman legal system.

By contrast to these codified systems, many other countries use a version of the English legal system, which relies upon a limited amount of statute law. This is then interpreted by courts, which build up large amounts of case law to supplement the statutes. Such a 'common law' system was formed in England primarily after the Norman Conquest (1066) by judges acting on the king's behalf. The common law is less abstract than codified law; a common law rule seeks to provide an answer to a specific case rather than to formulate a general rule for the future. This common law system may be found in similar forms in many countries influenced by England. Thus, the federal law of the United States, the laws of Ireland, India, Australia, and so on are to a greater or lesser extent modelled on English common law. This naturally influences company law, which traditionally does not prescribe a large number of detailed all-embracing rules to cover the behaviour of companies and how they should publish their financial statements. To a large extent (at least up until the British Companies Act 1981), accounting within such a context is not dependent upon law but is an independent discipline.

Why it matters *The way in which accounting is regulated has a great effect on how it works. In Roman law countries, accounting tends to be in the control of governments and lawyers. In common law countries, accountants are more important in the setting of accounting rules. This means that accounting rules can be changed more easily in*

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common law countries, and are changed more often. In such countries, the rules are more likely to be designed to be commercially useful. However, in Roman law countries there can be more democratic control over accounting.

Activity 4.A For your own country, describe the balance between the regulatory influences on accounting. For example, how important are elements of law compared with guidance written by accountants?

Feedback You should try to find out (or remember) whether in your country there are any of the following elements:

- Companies Acts;
- Commercial Code;
- accounting plans;
- mandatory accounting standards;
- professional guidelines;
- stock exchange requirements;
- other.

You may discover that some of these relate to only certain types of enterprises.

Having recorded your own answer, now read sections 4.3 and 4.4 to see whether they would improve your answer.

4.3 Enterprises

This book has generally referred to business being conducted by 'enterprises', which is the word used by the IASB. It is a word designed to cover all ways of organizing business operations. At one extreme, a business can be run by a single person with no partners, and no organization which is legally separate from the person. This business might be called a 'sole trader'.

The sole trader has unlimited liability for the debts of the business and pays personal income tax on the profits. If the business is to be sold, then the trader must sell the assets and liabilities because there is no legal entity to sell. Nevertheless, the trader keeps the accounts for the business separate from other personal activities, in accordance with the 'business entity' convention discussed in chapter 3. Otherwise, the success of the business and the amount of tax to pay will be unclear.

As the business becomes larger, it may be useful to have some joint owners (partners) who can contribute skills and money. The business then becomes a partnership, which is formalized by a contract between the partners that specifies their rights and duties. In common law countries, such as the United States and England (though not Scotland), a partnership does not have separate legal existence for most purposes. So, the partners are legally responsible for its assets and liabilities, and they pay tax on their share of the profits. Nevertheless, it is possible to set up a 'limited liability partnership' (LLP) and, for example, many accountancy firms have done so. The purpose of this is to seek to protect the

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partners from some part of the liabilities of the business if there are large legal cases. In Roman law countries, some forms of partnership do have separate legal status, although generally the partners still pay the business tax.

The complete separation of owners from their business is achieved by setting up a company, usually with limited liability for the owners. The ownership of the company is denoted by shares, which can be transferred from one owner (a shareholder) to another without affecting the company's existence. A company is a separate legal entity from its owners. The company can buy and sell assets, and it pays tax on its own profit.

In many jurisdictions, including the whole of the EU, companies can be either private or public. The private company is not allowed to create a public market in its shares, so they have to be exchanged by private agreement between the owners and the company. Many small businesses are set up as private companies. Table 4.1 shows some designations of such companies in the EU.

Public companies are allowed to have their shares traded on markets. Some designations of public companies are also shown in Table 4.1. Public companies have to comply with some extra rules because they can offer shares to the public but these rules vary by country and are of no importance for your studies at this stage. Figure 4.1 shows the four types of enterprise discussed so far. Size and complexity tend to increase towards the right.

The biggest form of market for shares is a stock exchange. Companies that are listed (quoted) on a stock exchange have extra rules to obey coming from stock exchanges, regulators of stock exchanges or other sources.

There are some linguistic problems here. First, the English word 'company' has no exact equivalent in some other languages. For example, the French *société* and

Table 4.1 Some EU (and EEA) company names

	Private	*Public*
Belgium, France, Luxembourg	Société à responsabilité limitée (Sarl)	Société anonyme (SA)
Denmark	Anpartsselskab (ApS)	Aktieselskab (AS)
Finland	Osakeyhtiö-yksityinen (Oy)	Osakeyhtiö julkinen (Oyj)
Germany, Austria	Gesellschaft mit beschränkter Haftung (GmbH)	Aktiengesellschaft (AG)
Greece	Etairia periorismenis efthynis (EPE)	Anonymos etairia (AE)
Italy	Società a responsabilità limitata (SRL)	Società per azioni (SpA)
Netherlands, Belgium	Besloten vennootschap (BV)	Naamloze vennootschap (NV)
Norway	Aksjeselskap (AS)	Almennaksjeselskap (ASA)
Portugal	Sociedade por quotas (Lda)	Sociedade anónima (SA)
Spain	Sociedad de responsabilidad limitada (SRL)	Sociedad anónima (SA)
Sweden	Aktiebolag-privat	Aktiebolag-publikt
United Kingdom, Ireland	Private limited company (Ltd)	Public limited company (plc)

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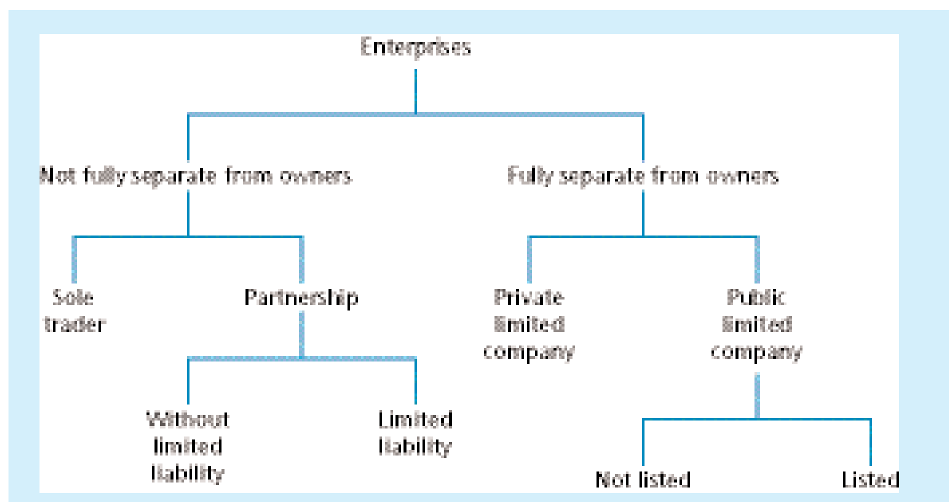
Figure 4.1 Four types of enterprise

the German *Gesellschaft* are broader terms also covering partnerships. Another problem is that the term 'public company' tends to be used, particularly in the United States, to mean *listed* company. Only public limited companies in the UK (and their equivalents elsewhere in Europe) are allowed to be listed; however, most such companies choose not to be listed. Figure 4.2 expresses some forms of enterprises in more detail than Figure 4.1.

Figure 4.2 Enterprises in more detail



Activity 4.B For your own country, try to allocate legal designations (such as those in Table 4.1) to each of the types of enterprise identified in Figure 4.2.

Feedback Let us take the example of France. Some designations are clear:

- partnerships can come in several forms, such as 'snc' (*société en nom collectif*).
- private limited companies are designated as 'Sarl', and public companies as 'SA'.

As another example, in the UK:

- partnerships have no designation, except that the limited liability partnership would be labelled 'LLP'.
- private companies have 'Ltd' after their names, and public have 'plc'.

As a business continues to increase in size and complexity, it may find it useful to arrange its affairs as a group of companies. This is particularly the case when it operates in more than one country, because it has to deal with different laws and taxes. Figure 4.3 illustrates a possible group. In this example, the Dutch

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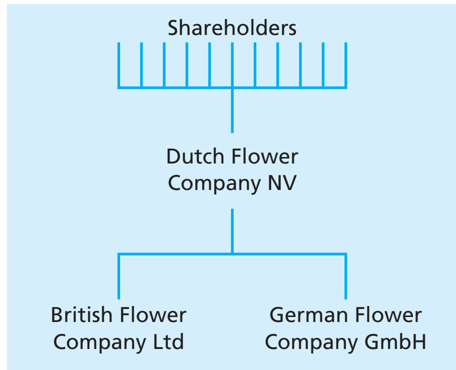
Figure 4.3 An international group



Flower Company is a public limited company with many shareholders. It owns all the shares in private companies in the United Kingdom and Germany. The Dutch company can be called the parent and the other two companies are subsidiaries.

The managers of the parent control all the decisions of the three companies, which therefore act together as a group. For many purposes it is useful to look at the total operations of the three companies added together. Financial statements that do this are called group statements or consolidated statements. The process of preparing them is examined in detail in chapter 14.

4.4 Examples of regulation

4.4.1 Germany

The basic source of accounting rules in Germany is the Commercial Code (*Handelsgesetzbuch*, abbreviated to HGB, and literally meaning the 'commercial law book'). The HGB is amended from time to time, most notably in 1985 as a result of implementation of EU Directives (see chapter 5). The HGB covers all types of enterprise in Germany, but limited companies have special rules and larger companies must be audited.

Because of the close links between tax and accounting in Germany (see section 5.2), the rules of tax law and the decisions of tax courts are also important for financial reporting. For listed companies, there are some additional disclosure requirements in a special law.

Compliance with the rules is the responsibility of the management of an enterprise. Auditors will check certain features of compliance. The tax authorities will check matters of concern to them. However, the consolidated financial statements of groups are generally not relevant for tax, even though parents and certain subsidiaries can sometimes be treated together for tax purposes (see section 12.2). Therefore, there may not be a fully effective enforcement mechanism, particularly for consolidated statements.

Since 1998 in Germany, consolidated statements of listed companies have been allowed to depart from the normal requirements of the HGB if they follow

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'internationally recognized rules' instead. There are other conditions, but US rules and International Standards are accepted. A number of large German companies take advantage of this permission, and it seems that there is no mechanism of enforcing the strict use of these 'foreign' rules.

Also in 1998, a private-sector standard setter was established: the Deutsches Rechnungslegungs Standards Committee (DRSC). The fact that the German for 'standards committee' is 'Standards Committee' tells us that it is an imported concept. The DRSC can recommend to the Ministry of Justice rules designed for listed companies in their consolidated statements.

4.4.2 France

The most detailed source of accounting instructions in France is the *plan comptable général* (PCG, general accounting plan). The PCG is a large document within the control of a governmental committee. Part of the PCG is a chart of accounts that regulates how double entries should be made; another part specifies the formats that financial statements should follow. The tax system uses the output in PCG format, so that there is detailed enforcement.

An outline of the chart of accounts in the French PCG, as amended in 1999, is shown as Table 4.2. The table shows only two digits, whereas the full plan has detailed account codes down to four (and sometimes five) digits. The recording of each type of transaction can be specified in great detail, so that it can be standardized throughout France. For example, an increase in provisions for depreciation on plant and machinery is recorded as:

Debit: Account 68112 (Depreciation expense on tangible fixed assets)
Credit: Account 2815 (Cumulative depreciation on plant and machinery).

France also has a Civil Code and several Companies Acts. All larger companies must be audited. For listed companies, there is a stock exchange regulator that exercises some enforcement powers.

4.4.3 The Netherlands

The Netherlands has a Civil Code but no history of great detail in its accounting regulations. Like the United Kingdom, the Netherlands implemented the relevant EU Directives by including many of the Directives' options. 'Guidelines' for financial reporting are prepared by a private-sector body: the Raad voor de Jaarverslaggeving (RJ; Council for Annual Reporting). The members of the RJ include preparers, users and auditors; and the auditing profession provides most of the technical support for the RJ. However, the guidelines cannot be enforced, and companies and auditors do not have to disclose non-compliance.

There is also an Enterprise Chamber of the High Court, which can hear cases concerning alleged poor financial reporting. However, it hears few cases and has not tried to enforce the guidelines.

As a result of this flexibility, it seems possible for Dutch companies to follow US or IASB rules.

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Table 4.2 Outline of French chart of accounts

Balance sheet					Operating	
Class 1	**Class 2**	**Class 3**	**Class 4**	**Class 5**	**Class 6**	**Class 7**
Owner equity, loans and similar liabilities	*Fixed assets*	*Stocks and works in progress*	*Debtors and creditors*	*Financial*	*Charges*	*Income*
10 Capital and reserves	20 Intangible assets	30 —	40 Suppliers and related accounts	50 Investment securities	60 Purchases (except 603). 603. Change in stocks (supplies and goods for resale)	70 Sales of manufactured goods, services, goods for resale
11 Profit or loss carried forward	21 Tangible assets	31 Raw materials (and consumables)	41 Customers and related accounts	51 Banks and credit institutions	61 External services	71 Change in stocks of finished goods and work in progress
12 Profit or loss for the financial year	22 Assets in concession	32 Other consumables	42 Staff and related accounts	52 —	62 Other external services	72 Own work capitalized
13 Investment grants	23 Assets in course of construction	33 Work in progress (goods)	43 Social security and other social agencies	53 Cash in hand	63 Taxes, levies and similar payments	73 Net period income from long-term transactions
14 Tax-regulated provisions	24 —	34 Work in progress (services)	44 Government and other public authorities	54 Expenditure authorizations and letters of credit	64 Staff costs	74 Operating grants
15 Provision for liabilities and charges	25 —	35 Finished goods	45 Group and associates	55 —	65 Other current operating charges	75 Other current operating income
16 Loans and similar liabilities	26 Participating interests and related amounts owned	36 —	46 Sundry debtors and creditors	56 —	66 Financial charges	76 Financial income
17 Debts related to participating interests	27 Other financial assets	37 Goods for resale	47 Provisional and suspense accounts	57 —	67 Extraordinary charges	77 Extraordinary income
18 Reciprocal branch and joint venture accounts	28 Cumulative depreciation on fixed assets	38 —	48 Accruals	58 Internal transfers	68 Appropria-tions to depreciation and provisions	78 Depreciation and provisions written back
19 —	29 Provisions for diminution in value of fixed assets	39 Provisions for diminution in value of stocks and work in progress	49 Provisions for doubtful debts	59 Provisions for diminution in value of financial assets	69 Employee profit share – income and similar taxes	79 Charges transferred

Notes: '—' = code not used.
Source: adapted and translated from the *plan comptable général*, Conseil National de la Comptabilité.

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4.4.4 The United Kingdom

There have been Companies Acts in the UK since 1844, but the accounting content was not detailed until the relevant EU Directives were implemented in the 1980s. All companies are covered, and audits are required in all cases except small companies ('small' being defined).

There are also accounting standards, which are more detailed than the present Companies Act (of 1985) on many issues. The standards were set by a committee of the accountancy profession until 1990 but are now set by an independent private-sector body, the Accounting Standards Board.

The overriding requirement of the Companies Act is that financial statements must give a true and fair view. This requirement is given more substance in the UK than elsewhere because the standard setters make requirements that remove some of the options in law and sometimes even contradict the detail of the law.

Enforcement of the rules is achieved because companies and auditors can be taken to court (by the Financial Reporting Review Panel (FRRP), another private-sector body) for 'defective accounts', and legal opinion is that financial statements that break accounting standards are likely to be defective.

4.4.5 The United States

There are no general Companies Acts or Codes in the United States, and so most companies have little regulation and no audit requirement. However, for listed companies there is the world's most active regulator: the Securities and Exchange Commission (SEC). The SEC was founded in 1934 as a reaction to the free-for-all in accounting that contributed to the Wall Street Crash of 1929. The SEC requires the use of 'generally accepted accounting principles' (GAAP) and also requires an audit. The SEC imposes serious penalties on auditors and companies that break the rules.

The SEC makes some of the content of GAAP but mostly chooses to rely upon the private sector to do this. Since 1973, the chosen body is the Financial Accounting Standards Board (FASB), which is a private-sector body set up to act in the public interest. The FASB is independent but is influenced by the fact that it could be overruled by the SEC.

4.4.6 Some other countries

Many other countries are similar to one or more of the above. For example, the Nordic countries have Bookkeeping Acts and Companies Acts which have incorporated the EU Directives. They also have various forms of accounting standards, set by committees involving representatives of various bodies, such as the accountancy profession and stock exchanges.

4.4.7 Generally accepted accounting principles (GAAP)

The term 'GAAP' is of US origin but is commonly used to describe accounting requirements, and so the term 'Swedish GAAP' might also be used, for example. In the United States, in the absence of company law, the term first meant the

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practices of large and respected companies, as recommended by textbooks and accepted by auditors. By the 1930s in the US, GAAP began to be codified, so that there is now also written (or promulgated) GAAP including accounting standards. The SEC requires companies registered with it to comply with GAAP.

In other countries, 'GAAP' is generally an unofficial term with no exact meaning, although there is a similar term, namely 'good accounting practice', in the laws of some countries, such as Denmark. For example, if one sees the term 'Swedish GAAP' it presumably includes Swedish law, Swedish accounting standards and the practices of respected companies and auditors.

4.5 The regulation of International Standards

The IASB and the content of its standards are examined in more detail in chapter 5, but it is appropriate here to look briefly at regulation. IAS 1 requires that financial statements described as complying with International Financial Reporting Standards should comply with all requirements of all the IFRSs. If national rules require compliance with IFRSs, then domestic mechanisms can cover their enforcement. For example, in some countries (e.g. Malaysia), the national standard setter adopts IFRSs. Also, in some countries (e.g. Cyprus), the national stock exchange requires listed companies to comply with IFRSs.

In the EU (and EEA) from 2005, listed companies are required to use IFRSs for their consolidated statements. For unlisted companies and for unconsolidated statements, the position varies around Europe. IFRSs can either be compulsory, optional or not allowed. Where IFRSs are not used, the national systems continue. All this implies that such IFRS statements fall within the scope of national legal and enforcement systems. This means that the FRRP in the UK and the stock exchange regulator in France carry out the monitoring.

This book explains and examines financial reporting using IFRSs as the main regulatory reference but also bearing in mind the need for all EU companies (and those in other European Economic Area countries, such as Norway) to comply with EU rules.

Why it matters

If national rules cannot be enforced, then the rule makers are likely to set weak rules with many options in them. Even then, the rules might not be strictly complied with. The result will be a set of rules and financial statements that are not well regarded domestically or internationally.

The IASB's predecessor spent most of the 1990s improving its standards, as explained in the next chapter, but the IAS system is presently somewhat undermined by a lack of enforcement.

SUMMARY

- This chapter examines the various ways in which accounting (and particularly financial reporting) can be regulated, such as by legislation, stock exchange regulations or accounting standards.
- Most countries of direct concern in this book can be neatly divided into two types with respect to the predominant legal system: codified law countries (Roman in origin) and common law countries (English in origin).

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- As enterprises become larger and more complex, they often move from a sole-trader format to a partnership to a private limited company to a public limited company. Some of the last of these have their securities traded on stock exchanges.
- Germany illustrates regulation by commercial code; France by accounting plan; the US by stock exchange regulator and private independent standard setter; the UK by Companies Act and private independent standard setter; and the Netherlands by civil code and by guidelines under the main influence of the accountancy profession.
- International Financial Reporting Standards have no built-in regulatory mechanism of their own but can be imposed by national regulators.

References and research

The IASB document particularly relevant to this chapter is IAS 1, *Presentation of Financial Statements*.

The following are examples of research papers in the English language that take the issues of this chapter further:

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Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

4.1 Which country does not generally use a version of Roman commercial law?

(a) France.
(b) Germany.
(c) United States.
(d) Japan.

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4.2 The primary source of new accounting rules in the United Kingdom is:

(a) Parliament.
(b) Government departments.
(c) The Accounting Standards Board.
(d) The Financial Reporting Review Panel.

4.3 An accounting plan, including a chart of accounts, is an important source of accounting rules in:

(a) The United States.
(b) Denmark.
(c) France.
(d) The Netherlands.

4.4 Withdrawals (drawings) by the owner of a sole proprietorship are similar in nature to which of the following for corporations?

(a) Investments by shareholders.
(b) Payments to creditors.
(c) Retained earnings.
(d) Dividends.

4.5 The partnership format might be useful to the owners of a small business in order to:

(a) Share risks.
(b) Gain limited liability.
(c) Reduce taxable income.
(d) Share profits.

4.6 A company's income statement would normally include which of the following items that would *not* be found on an income statement of a sole trader?

(a) Tax expense.
(b) Interest income.
(c) Interest expense.
(d) Income from operations.

4.7 Corporations generally have which of the following *differences* from partnerships in the English legal system, as also operated in the United States? (*Please read through the complete question before answering*.)

(a) The owners have limited liability for the debts of the business.
(b) The corporation is a separate legal entity.
(c) The corporation is accounted for as separate from the owner.
(d) The corporation pays tax on its profits.
(e) Corporations are cheaper to form.
(f) Corporations have fewer rules to obey.

Circle as many letters as you think are differences.

4.8 What is the meaning of the word 'limited' in the name of a limited company?

(a) The number of shareholders is limited to 50.
(b) The liability of the company for its own debts is limited.
(c) The liability of shareholders for the company's debts is limited.
(d) There is a limit on the amount of debts that the company can contract.

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Exercises

Feedback on the first two of these exercises is given in Appendix E.

4.1 Do you think Roman law or common law provides a better context in which financial reporting can achieve its objectives? Explain the reasons for your choice.

4.2 What are the advantages and disadvantages of making accounting rules by law as opposed to private-sector standards?

4.3 Contrast the degree to which the state is involved in the regulation of accounting in Germany, the United Kingdom, the United States and (if not one of those three) your own country.

4.4 Who is supposed to obey accounting standards in the United States? Are they followed in practice?

4.5 Explain the various possible advantages that a number of sole traders might obtain by joining together as a partnership.

4.6 Explain the various advantages and disadvantages of moving to a corporate form of business instead of operating as a partnership.

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5

International differences and harmonization

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- outline the international nature of accounting developments;
- suggest the major causes of international differences in accounting;
- explain why it might be useful to group countries by accounting similarities;
- appraise some suggested international classifications of countries;
- distinguish between EU and international harmonization efforts;
- assess the success of these harmonization efforts.

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5.1 Introduction: the international nature of the development of accounting

Different countries have contributed to the development of accounting over the centuries. When archaeologists uncover ancient remains in the Middle East, almost anything with writing or numbers on it is a form of accounting: expenses of wars or feasts or constructions; lists of taxes due or paid. It is now fairly well documented that the origins of written numbers and written words are closely associated with the need to keep account and to render account.

The Romans developed sophisticated forms of single-entry accounting from which, for example, farm profits could be calculated. Later, the increasing complexity of business in late-medieval northern Italy led to the emergence of the double-entry system. Later still, the existence of a wealthy merchant class and the need for large investment for major projects led to public subscription of share capital in seventeenth-century Holland. Next, the growing separation of ownership from management raised the need for audit in nineteenth-century Britain. Many European countries have contributed to the development of accounting: France led in the development of legal control over accounting; Scotland gave us the accountancy profession; Germany gave us standardized formats for financial statements.

From the late nineteenth century onwards, the United States has given us consolidation of financial statements (see chapter 14), management accounting, capitalization of leases (see chapter 9) and deferred tax accounting (see chapter 12). The United Kingdom contributed the 'true and fair view' (see section 5.4), which has been rounded out with the American 'substance over form'.

The common feature of all these international influences on accounting is that commercial developments have led to accounting advances. Not surprisingly, leading commercial nations in any period are the leading innovators in accounting. So, for example, in the late twentieth century, Japan contributed greatly to managerial accounting and control.

However, although international influences and similarities are clear, there are also great differences, particularly within Europe. An indication of the scale of international difference can be seen in those cases where companies publish two sets of accounting figures based on different rules – generally domestic rules compared with US rules. Table 5.1 shows some interesting examples for earnings. Daimler-Benz (now DaimlerChrysler) was the first German company to provide this data, in 1993. The large differences (and the variation from year to year)

Table 5.1 Reconciliations of earnings

		Domestic	*US-Adjusted*	*Difference*
Daimler-Benz:	1993	DM615m	DM(1.839m)	–399%
(Germany)	1994	DM895m	DM1.052m	+18%
	1995	DM(5.734m)	DM(5.729m)	+1%
British Airways:	2002	£(142m)	£(119m)	+16%
(UK)	2003	£72m	£(128m)	–278%

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Table 5.2 Reconciliations of shareholders' equity

		Domestic	*US-Adjusted*	*Difference*
Glaxo Wellcome:	1995	£91m	£8,168m	+8,876%
(UK)	1996	£1,225m	£8,153m	+566%
Astra-Zeneca:	1998	£10,929m	£5,558m	−49%
(UK–Sweden)	1999	£10,302m	£33,375m	+227%

between German and US profit figures were a surprise to many accountants and users of financial statements. The figures for British Airways, too, show that profits can need adjustment either up or down.

Table 5.2 shows some adjustments for shareholders' equity. Glaxo Wellcome was a pharmaceutical company, now merged into GlaxoSmithKline. It showed vast balance sheet reconciliation differences. Astra-Zeneca is a large Anglo-Swedish company that also discloses very large differences between its UK and US accounting calculations for shareholders' funds.

This chapter tries to put countries into groups based on similarities of accounting, and then investigates the causes of the international accounting differences. After that, the chapter contains an examination of the attempts in the EU and by the IASB to reduce the differences.

5.2 Classification

5.2.1 Introduction

Although no two countries have identical accounting practices, some countries seem to form pairs or larger groupings with reasonably similar influences on financial reporting, such as legal and tax systems. If this is so, it may be possible to establish a classification. Such an activity is a basic step in many disciplines; for instance, classification is one of the tools of a scientist – the Mendeleev table of elements and the Linnaean system of classification are fundamental to chemistry and biology. Classification should sharpen description and analysis. It should reveal underlying structures and enable prediction of the properties of an element based on its place in a classification.

One set of authors, while classifying legal systems, has supplied practical criteria for determining whether two systems are in the same group. Systems are said to be in the same group if 'someone educated in … one law will then be capable, without much difficulty, of handling [the other]' (David and Brierley, 1978). Also, the two systems must not be 'founded on opposed philosophical, political or economic principles'. The second criterion ensures that systems in the same group not only have similar superficial characteristics but also have similar fundamental structures and are likely to react to new circumstances in similar ways. Using these criteria a four-group legal classification was obtained: Romano-Germanic, common law, socialist and philosophical-religious.

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In accounting, classification should facilitate a study of the logic of, and the difficulties facing, international harmonization. Classification should also assist in the training of accountants and auditors who operate internationally. Further, a developing country might be better able to understand the available types of financial reporting, and which one would be most appropriate for it, by seeing which other countries use particular systems. Also, it should be possible for a country to predict the problems that it is about to face and the solutions that might work by looking at other countries in its group.

5.2.2 Classifications using survey data

Some researchers have used surveys of accounting practices as data. Classification is achieved by the use of computer programs designed to put countries into groups by similarities of practices. For example, one set of researchers (Nair and Frank, 1980) divided financial reporting characteristics into those relating to measurement and those relating to disclosure. Table 5.3 represents a classification using measurement characteristics from 1973. As yet there was no hierarchy, but the overall results seemed very plausible and to fit well with the analysis in this chapter. The suggestion was that, in a world-wide context, much of Continental Europe was seen as using the same system. However, the United Kingdom, Ireland and the Netherlands were noticeably different.

5.2.3 Nobes' classification

It would be possible to criticize the classifications discussed above for:

(a) lack of precision in the definition of what is to be classified;
(b) lack of a model with which to compare the statistical results;

Table 5.3 Classification based on 1973 measurement practices

British Commonwealth model	*Latin American model*	*Continental European model*	*United States model*
Australia	Argentina	Belgium	Canada
Bahamas	Bolivia	France	Japan
Eire	Brazil	Germany	Mexico
Fiji	Chile	Italy	Panama
Jamaica	Columbia	Spain	Philippines
Kenya	Ethiopia	Sweden	United States
Netherlands	India	Switzerland	
New Zealand	Paraguay	Venezuela	
Pakistan	Peru		
Singapore	Uruguay		
South Africa			
Trinidad and Tobago			
United Kingdom			
Zimbabwe			

Source: Nair and Frank, *American Accounting Review* (1980), p. 429.

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(c) lack of hierarchy that would add more subtlety to the portrayal of the size of differences between countries; and
(d) lack of judgement in the choice of 'important' discriminating features.

Can these problems be remedied? One of the authors of this book attempted to solve them in the following ways (see Nobes, 1983).

The scope of the work was defined as the classification of some Western countries by the financial reporting practices of their *listed companies*, and it was carried out in the early 1980s. The reporting practices were those concerned with *measurement and valuation*. It is listed companies whose financial statements are generally available and whose practices can be most easily discovered. It is the international differences in reporting between such companies that are of main interest to shareholders, creditors, auditing firms, taxation authorities, management, and harmonizing agencies. Measurement and valuation practices were chosen because these determine the size of the figures for profit, capital, total assets, liquidity and so on. The result is shown in Figure 5.1.

This figure suggests that there were two main types of financial reporting 'system' in Europe at the time: the micro/professional and the macro/uniform. The first of these involved accountants in individual companies striving to present fair information to outside users, without detailed constraint of law or tax rules but with standards written by accountants. The macro/uniform type had accounting mainly as a servant of the state, particularly for taxation purposes.

The micro/professional side contained the Netherlands, the United Kingdom, Ireland, Denmark, the United States, Australia, New Zealand and Canada. The Netherlands had (and has) fewer rules than the other countries, and another distinguishing feature is that the influence of microeconomic theory led to use of replacement cost information to varying degrees. Denmark rearranged its accounting system after the Second World War and it now looks somewhat like the United Kingdom or the United States.

The macro/uniform side contained all other European countries and Japan. However, they were divided into subgroups. For example, accounting plans were (and are) the predominant source of detailed rules in France, Belgium, Spain and Greece. In Germany the commercial code was (and is) the major authority and there was (and is) much stricter observance of historical cost values. In Sweden, the predominant influence seems to have been the government as economic planner and tax collector.

Table 5.4 summarizes some of the typical differences between countries on a two-group basis. A number of the 'specific accounting features' are examined in Part 2 of this book.

5.2.4 An updated classification

The classification of Figure 5.1 was originally drawn up in the early 1980s, before the EU harmonization programme and before extensive globalization of capital markets. The fall of Communism has also meant that many more countries, such as China and Russia, have financial reporting systems that could be added to the

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Figure 5.1 Groupings of some major countries in 1980

Notes:

a. This is an abbreviated term for corporate financial reporting.

b. These terms, while borrowed from biology, should be interpreted merely as loose labels.

c. The terms at these and other branching points are merely labels to be used as shorthand to try to capture some of the attributes of the members of the accounting systems below them. This classification has been prepared by a UK researcher and may contain usage of terms that will mislead those from other cultures.

Source: Adapted from Nobes (1983)

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Table 5.4 A two-group classification (traditional practices[a])

Micro	*Macro*
	Background
'English' common law	Roman law
Large, old, strong profession	Small, young, weak profession
Large stock exchange	Small stock exchange
	General accounting features
Fair	Legal
Shareholder-orientation	Creditor-orientation
Disclosure	Secrecy
Tax rules separate	Tax-dominated
Substance over form	Form over substance
Professional standards	Government rules
	Specific accounting features
Percentage-of-completion method	Competed-contract method
Depreciation over useful lives	Depreciation by tax rules
No legal reserves	Legal reserves
Finance leases capitalized	No lease capitalization
Funds flow statements	No funds flow statements
Earnings per share disclosed	No disclosures on earnings per share
No secret reserves	Secret reserves
No tax-induced provisions	Tax-induced provisions
Preliminary expenses expensed	Preliminary expenses capitalizable
Taking gains on unsettled foreign currency monetary items	Deferring gains on unsettled foreign currency monetary items
	Some examples of countries
Australia	Austria
Canada	Belgium
Denmark	Finland
Hong Kong	France
Ireland	Germany
Singapore	Greece
Netherlands	Italy
United Kingdom	Japan
United States	Sweden

[a] From the late 1980s in particular, accounting practices in several countries made significant shifts to the left.

1983 classification. Some countries, such as Sweden (and Norway) have moved to the left of the chart since the early 1980s.

A further complication is that, particularly from the early 1990s and in certain countries, large companies have chosen to follow internationally recognized practices rather than domestic practices. For example, most of the largest 50 German companies now use US or IASB rules for their group accounting statements. In a sense, then, there are several 'systems' being used in Germany. In 1998, Nobes published a revised classification to try to take account of some of these problems; this is shown in Figure 5.2.

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Figure 5.2 Proposed scheme for classification

Some accounting systems

CLASS
- Strong equity, Class A
- Weak equity, Class B

FAMILY / SYSTEM / EXAMPLES

Strong equity, Class A
- Standard Dutch
  1. Dutch accounts
- UK GAAP
  1. UK accounts
  2. Irish accounts
- IAS GAAP
  1. Singapore listed companies
  2. Bayer (Germany), Nestlé (Switzerland)
- US GAAP
  1. US SEC-registered company accounts
  2. Some Japanese group accounts

Weak equity, Class B
- Standard Belgian
  1. Belgian accounts
- Standard French
  1. French individual accounts and some French group accounts
- Standard German
  1. German individual and group accounts, except for some group accounts of large listed companies
  2. Austrian individual accounts
- Standard Italian
  1. Italian individual accounts, or unlisted group accounts
- Standard Japanese
  1. Japanese individual accounts and most group accounts

Source: Adapted from Nobes (1998)

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The use of two systems within a country is a major example of the fact that practices vary between companies within a country. This chapter has not examined in any detail the differences within a country.

Why it matters *The purpose of Figures 5.1 and 5.2 is to organize countries into groups by similarities of financial reporting measurement practices. This means that a knowledge of one country enables inferences to be drawn about others. The 'distance' between two countries is suggested by how far back up the classification it is necessary to go to reach a common point. This should be useful for those accountants and auditors who have to deal with financial reports from several countries or who have to work in more than one country.*

Such a classification can be borne in mind while studying the detailed accounting practices set out in Part 2.

Activity 5.A If you were trying to predict what financial reporting practices would be found in various African countries, which non-accounting variables would you measure?

Feedback The activity asks you about African countries on the assumption that most readers of this book do not know much in detail about the accounting practices used in the continent of Africa. Consequently, you could try to use the model of this chapter to make predictions.

It is well known that most countries in Africa have been colonies of various European countries, often until at least the second half of the twentieth century. Consequently, it seems likely that languages, legal systems and other 'cultural' features will have been imported, voluntarily or otherwise. Some of these may influence accounting practices today.

Even more directly, the main elements of accounting systems may have been imported. This suggests that, at a first approximation, the identification of colonial influence may predict accounting differences in Africa. For example, you might expect various French accounting features in Senegal, but various British features in neighbouring Gambia.

This might overwhelm factors such as the strength of equity markets. So, some 'British' African countries have aspects of Anglo-American accounting even though they have no listed companies.

5.3 Influences on differences

5.3.1 Introduction

It is not possible to be *sure* that the factors discussed below cause the financial reporting differences, but relationships can be established and reasonable deductions about the directions of causality can be made. Factors that have been seen as affecting accounting development include colonial and other outside influences, the prevalent providers of finance, the nature of the legal system, the influence of taxation, and the strength of the accountancy profession.

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On a world-wide scale, factors such as language, culture or geography have been referred to by researchers. To the extent that these also have some explanatory power, it seems more sensible to assume that this results from auto-correlation. For instance, the fact that Australian accounting bears a marked resemblance to accounting in New Zealand might be 'confirmed' by language and geographical factors. However, most of their similarities were probably not caused by these factors but by their historical connection with the United Kingdom, which passed on both accounting and language, and was colonizing most parts of Australasia in the same period.

If one wanted to encompass countries outside the developed Western world, it would be necessary to include factors concerning the state of development of their economy and the nature of their political economy. Of course, to some extent a precise definition of terms might make it clear that it is impossible to include some of these countries. For example, if our interest is in the financial reporting practices of corporations with shares listed on stock exchanges, those countries with few or no such corporations will have to be excluded. The four factors identified above (providers of finance, legal systems, taxation and the accountancy profession) are now considered in turn, after which international influences are examined in more detail.

5.3.2 Providers of finance

In some countries, a major source of corporate finance for two centuries has been the share capital and loan capital provided by large numbers of private investors. This has been the predominant mode of raising finance in the United States and the United Kingdom. Although it is increasingly the case that shares in these countries are held by institutional investors rather than by individual shareholders, this still contrasts with state, bank or family holdings (see below). Indeed, the increased importance of institutional investors is perhaps a reinforcement for the following hypothesis: 'In countries with a widespread ownership of companies by shareholders who do not have access to internal information, there will be a pressure for disclosure, audit and decision-useful information.' Institutional investors hold larger blocks of shares and may be better organized than private shareholders, and so they should increase this pressure.

By contrast, in France and Italy, capital provided by the state or by banks is very significant, as are family businesses. In Germany, the banks, in particular, are important owners of shares in companies as well as providers of debt finance. A majority of shares in some German public companies are owned directly, or controlled through proxies, by banks. In such countries the banks or the state will, in many cases, nominate directors and thus be able to obtain restricted information and to affect decisions. If it is the case that many companies in continental countries are dominated by banks, governments or families, the need for published information is much smaller because of this access to private information. This also applies to the need for audit, because this is designed to check up on the managers in cases where the owners are 'outsiders'.

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Table 5.5 Major stock exchanges at February 2003

Country	*Exchange*	*Domestic listed companies*	*Market capitalization of domestic equities ($bn)*	*Market capitalization as % of United Kingdom*
Europe				
France	Euronext (Paris list)	737	928	61
Germany	Deutsche Börse	706	655	40
Italy	Italian	282	477	29
Spain	Madrid	1,829	459	28
Switzerland	Swiss Exchanges	255	503	31
United Kingdom	London	2,392	1,630	100
North America				
Canada	Toronto	1,252	606	37
United States	NASDAQ	3,176	1,978	121
	New York	1,885	8,543	524
Asia				
China	Hong Kong	973	462	28
Japan	Tokyo	2,134	2,042	125
Australasia				
Australia	Australian	1,353	382	23

Source: World Federation of Exchanges; Euronet; Bolsa Madrid.

Evidence of the two-way characterization of countries may be found by looking at their numbers of listed companies. Table 5.5 shows the numbers, in early 2003, of *domestic* listed companies on stock exchanges where there are over 250 such companies and a market capitalization above $350 billion. Table 5.6 shows figures for the EU's eight largest economies in 1999, putting the size of the equity market in the context of the size of the economy, and the number of domestic listed companies in the context of the population. The comparison between the United Kingdom (with a large equity market) and Germany (with a much smaller equity market) is instructive.

Table 5.6 Measures of equity markets in Europe

	Equity market capitalization/Gross domestic product	*Domestic listed companies per million of population*
United Kingdom	1.86	41.2
Netherlands	1.44	13.7
Sweden	1.10	29.3
Belgium	0.87	15.2
France	0.61	13.4
Spain	0.59	11.9
Italy	0.48	4.2
Germany	0.44	9.0

Source: Prepared using *Fact File 1999*, London Stock Exchange; and *Pocket World in Figures 1999*, The Economist.

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Activity 5.B Examine Tables 5.5 and 5.6. Try to put countries into groups with respect to the strength of their equity markets (in the context of a measure of the size of the country).

Feedback A two-tier group categorization of all the countries in Table 5.6 and a few more from Table 5.5 might look as below, in Table 5.7. Incidentally, the country with the longest history of companies with publicly traded shares is the Netherlands. Although it has a fairly small stock exchange, many multinationals (such as Unilever, Philips, Royal Dutch) are listed on it. It seems reasonable, then, to place the Netherlands with the English-speaking world in a 'shareholder' group as opposed to a 'bank/state/family' group.

Table 5.7 Countries classified by strength of equity markets

Stronger	*Weaker*
United States	France
United Kingdom	Spain
Netherlands	Germany
Sweden	Italy
Australia	Belgium
Hong Kong	Portugal

Japan is not shown in Table 5.7 above because it is difficult to classify. It has a fairly important equity market, although not as important (in context) as that in the US or the UK. Furthermore, many Japanese companies own shares in each other, and so the total number of listed companies and market value is exaggerated when making an international comparison. Japanese accounting has both German and US features.

The characteristic of 'fairness' was mentioned above, as it has been in previous chapters. It is a concept related to the existence of a large number of outside owners who require unbiased information about the success of a business and its state of affairs. Although reasonable prudence will be expected, these shareholders are interested in comparing one year with another and one company with another. This entails judgement, which entails experts. This expertise is also required for checking financial statements by auditors. In countries such as the United Kingdom, the United States and the Netherlands, this can, over many decades, result in a tendency to require accountants to work out their own technical rules. This is acceptable to governments because of the influence and expertise of the private sector, which is usually running ahead of the government (in its capacity as shareholder, protector of the public interest or collector of taxation). Thus 'generally accepted accounting principles' control accounting. To the extent that governments intervene, they impose disclosure, filing or measurement requirements, and these tend to follow best practice rather than create it.

In many continental European countries (such as France, Germany and Italy), the traditional scarcity of 'outsider' shareholders has meant that external

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financial reporting has been largely invented for the purposes of governments, as tax collectors or controllers of the economy. This has held back the development of flexibility, judgement, fairness or experimentation. However, it does lead to precision, uniformity and stability. It also seems likely that the greater importance of creditors in these countries leads to more prudent (conservative) accounting. This is because creditors are interested in whether, in the worst case, they are likely to get their money back, whereas shareholders may be interested in an unbiased estimate of future prospects.

Nevertheless, even in such countries as Germany, France or Italy, where there are comparatively few listed companies, governments have recognized the responsibility to require public or listed companies to publish detailed, audited, financial statements. There are laws to this effect in the majority of such countries, and the governments in France and Italy also set up bodies specifically to control the securities markets: in France the *Commission des Opérations de Bourse* (COB), and in Italy the *Commissione Nazionale per le Società e la Borsa* (CONSOB). These bodies were to some extent modelled on the Securities and Exchange Commission (SEC) of the United States. They have been associated with important developments in financial reporting, generally in the direction of Anglo-American practice. This is not surprising, as these stock exchange bodies are taking the part otherwise played by private and institutional shareholders, who have, over a much longer period, helped to shape Anglo-American accounting systems.

5.3.3 Legal systems

Legal systems were considered in section 4.2. It was suggested that many countries in the world can be put into one of two categories with respect to their main legal system: common law or Roman law. Table 5.8 illustrates the way in which some developed countries' legal systems fall into these two categories. The legal systems of the Nordic countries are more difficult to classify, as they do not fit neatly into either category. Notice how similar the list is to Table 5.7. There seems to be a relationship between financing system, legal system and accounting system, as noted later.

Table 5.8 Legal systems: some examples

Common law	*Codified Roman law*
England and Wales	France
Ireland	Italy
United States	Germany
Canada	Spain
Australia	Netherlands
New Zealand	Portugal
Hong Kong	Japan (commercial)

5.3.4 Taxation

Although it is possible to make groupings of tax systems in a number of ways, only some of them are of relevance to financial reporting (see chapter 12). What

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is particularly relevant is the degree to which taxation regulations determine accounting measurements. For example, in Germany, the tax accounts (*Steuerbilanz*) should generally be the same as the commercial accounts (*Handelsbilanz*). There is even a word for this idea: the *Massgeblichkeitsprinzip* (principle of congruence or binding together). In Italy, a similar position prevails, described as *il binario unico* (the single-track approach).

By contrast, in the United Kingdom, the United States and the Netherlands, there can be many differences between tax numbers and financial reporting numbers. One obvious example of the areas affected by this difference is depreciation (which is discussed further in chapter 9). In the United Kingdom, for example, the amount of depreciation charged in the published financial statements is determined according to custom established over the last century and influenced by the prevailing accounting standard. Convention and pragmatism, rather than exact rules or even the spirit of the standard, determine the method of depreciation, the estimates of the scrap value and the expected length of life.

The amount of depreciation for tax purposes in the United Kingdom is quite independent of these figures. It is determined by capital allowances, which are a formalized scheme of tax depreciation allowances designed to standardize the amounts allowed and to act as investment incentives, as designed by the government of the day. Because of the separation of the two schemes, there can be a complete lack of subjectivity in tax allowances but full room for judgement in determining the depreciation charges for financial reporting.

At the opposite extreme, in countries such as Germany the tax regulations lay down maximum depreciation rates to be used for particular assets. These are generally based on the expected useful lives of assets. However, accelerated depreciation allowances are available in some cases: for example, for industries producing energy-saving or anti-pollution products or for certain regions. Up until the re-unification of Germany in 1990, large allowances applied in West Berlin or other areas bordering East Germany; now they apply in the new German *Länder* in the east. If these allowances are to be claimed for tax purposes (which would normally be sensible), they must also be fully charged in the financial accounts. Thus, the charge against profit would be said by a UK accountant not to be 'fair', even though it could certainly be 'correct' or 'legal'. This influence is felt even in the details of the choice of method of depreciation, where a typical German note to a company's balance sheet might read: 'Plant and machinery are depreciated over a useful life of ten years on a declining-balance basis: straight-line depreciation is adopted as soon as this results in a higher charge.'

With some variations, this *Massgeblichkeitsprinzip* operates in Germany, France, Belgium and Italy and many other countries. It is perhaps due partly to the pervasive influence of codification in law and partly to the predominance of taxation as a use of accounting. Nevertheless, by the late 1980s, there were clear moves away from this in some countries. For example, the Spanish accounting law of 1989 reduces the influence of tax and increases disclosures of the remaining tax effects. Similarly, in Nordic countries, the influence of taxation has been reducing. This has been clear since the early 1980s in Denmark and became important in Finland, Norway and Sweden in the 1990s.

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Why it matters *Let us suppose that you would like to use the financial statements of a company for the purpose of assessing its performance, so that you can try to predict cash flows in order to make investment decisions. However, suppose also that the company operates in a country where a major purpose of accounting is the calculation of taxable income, using the government's rules for that purpose. These rules may not be designed to measure the performance of a year but to provide investment incentives for companies (e.g. by offering them large tax depreciation allowances) or to enable the statements to be checked easily by tax auditors. Disclosures designed to help the prediction of cash flows might be seen as irrelevant. Also, the company would usually be trying to make its income look as small as possible, in order to avoid or postpone tax.*

In this case, the financial statements might not be very useful to you because they were being prepared to serve other purposes.

When dealing with the financial statements of groups of companies (see chapter 14), taxation influences can be reduced because taxable income is generally calculated for each legal entity rather than on a consolidated basis, as noted in chapter 4. For example, France has substantially liberated consolidated accounts from tax rules.

5.3.5 The accountancy profession

The power, size and competence of the accountancy profession in a country may follow, to a large extent, from the various factors outlined above and from the type of financial reporting that they have helped to produce. For example, the lack of a substantial body of private shareholders and public companies in some countries means that the need for auditors is much smaller than it is in the United Kingdom or the United States. However, the nature of the profession also feeds back into the type of accounting that is practised and that could be practised. For example, a 1975 Decree in Italy (not brought into effect until the 1980s), requiring listed companies to have extended audits similar to those operated in the United Kingdom and the United States, could only be brought into effect initially because of the substantial presence of international audit firms.

The scale of the difference is illustrated in Table 5.9, which lists the main bodies whose members may audit the accounts of companies (but see below for an explanation of the French and German situations). These remarkable figures (e.g. the small number of auditors in Germany) need some interpretation. For example, let us compare more carefully the German and the British figures. In Germany, there is a separate, though overlapping, profession of tax experts (*Steuerberater*), which is larger than the accountancy body. However, in the United Kingdom the accountants' figure is inflated by the inclusion of many who specialize in, or occasionally practise in, tax. Second, a German accountant may only be a member of the *Institut* if he is in practice as an auditor, whereas at least half of the British figure represents members working in companies, government, education, and so on. Third, the training period is much longer in Germany than it is in the United Kingdom. It normally involves a four-year relevant degree course, six years' practical experience (four in the profession), and a professional

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Table 5.9 Public accountancy bodies, age and size

Country	*Body*	*Founding date*[a]	*Approx. number of members (thousands) 2003*
Australia	Australian Society of Certified Practising Accountants	1952 (1886)	97
	Institute of Chartered Accountants in Australia	1928 (1885)	34
Canada	Canadian Institute of Chartered Accountants	1902 (1880)	68
Denmark	Foreningen af Statsautoriserede Revisorer	1912	3
Finland	KHT-yhdistys	1925 (1911)	1
France	Ordre des Experts Comptables	1942	16
Germany	Institut der Wirtschaftsprüfer	1932	11
Italy	Consiglio Nazionale dei Dottori Commercialisti	1924	48
	Collegio dei Ragionieri e Periti Commerciali	1906	40
Japan	Japanese Institute of Certified Public Accountants	1948 (1927)	18
Netherlands	Nederlands Instituut van Registeraccountants	1967 (1895)	13
New Zealand	New Zealand Society of Accountants	1909 (1894)	27
Norway	Den norske Revisorforening	1999 (1930)	3
Sweden	Föreningen Auktoriserade Revisorer (FAR)	1923	3
	Svenska Revisorsamfundet (SRS)	1899	2
United Kingdom and Ireland	Institute of Chartered Accountants in England and Wales	1880 (1870)	124
	Institute of Chartered Accountants of Scotland	1951 (1854)	15
	Association of Chartered Certified Accountants	1939 (1891)	95
	Institute of Chartered Accountants in Ireland	1888	13
United States	American Institute of Certified Public Accountants	1887	328

Note: [a] Dates of earliest predecessor bodies in brackets.

examination consisting of oral and written tests plus a thesis. This tends to last until the aspiring accountant is 30–35 years old. Thus, many of the German ‘students’ would be counted as part of the qualified figure if they were in the British system. Fourth, in the 1980s, a second-tier body of *vereidigte Buchprüfer* (sworn bookcheckers) was established, whose members may audit certain private companies (GmbHs).

These four factors help to explain the differences; and some of them apply in other countries, e.g. there is a second-tier body of auditors in Denmark. However, there is still a very substantial residual difference, which results from the much larger number of companies to be audited and the different process of forming a judgement on the ‘fair’ view. The differences are diminishing as auditing is extended to many private companies in EU countries and as the United Kingdom introduces audit exemptions for smaller companies.

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It is interesting to note a further division along Anglo-American versus Franco-German lines. In the Anglo-American countries, governments or government agencies require certain types of companies to be audited, and they put certain limits on who shall be auditors, with government departments having the final say. However, in general, membership of the private professional accountancy bodies is the method of qualifying as an auditor. On the other hand, in France and Germany there is a dual set of accountancy bodies. Those in Table 5.9 are private-sector professional bodies. However, in order to act as an auditor of companies, one must join a government-controlled auditing body (see Table 5.10). To a large extent the membership of the professional bodies overlaps with that of the auditing bodies, and membership of the professional bodies is part of the way of qualifying for membership of the auditing bodies. The *Compagnie Nationale* is responsible to the Ministry of Justice; the *Wirtschaftsprüferkammer* to the Federal Minister of Economics.

Table 5.10 Accountancy and auditing bodies in France and Germany

	Private professional body	*State auditing body*
France	Ordre des Experts Comptables	Compagnie Nationale des Commissaires aux Comptes
Germany	Institut der Wirtschaftsprüfer	Wirtschaftsprüferkammer

5.3.6 Synthesis

The above discussion of the factors relating to international accounting differences can be somewhat simplified, for some of the factors seem mainly to be influenced *by* accounting differences rather than the other way round. Such a case could be made for the last three of the above four factors:

Legal systems

Even in a Roman/codified law country, the regulation of accounting can be left up to accountants if commercial pressure demands this. For example, in the Netherlands, the Civil Code is not detailed and allows room for accountants to make rules, and in practice allows for some companies to follow US requirements. So, although the whole legal system is not strongly influenced by the nature of the accounting system, the regulation of accounting is.

Tax systems

The existence of *Massgeblichkeit* or *il binario unico* is probably sensible in Germany and Italy respectively because, for the great mass of enterprises, the calculation of taxable income is the main purpose of accounting. Where there is a competing purpose for accounting (e.g. the provision of useful financial reports to millions of shareholders in thousands of listed companies), accounting has to be done twice. For example, as already discussed, there are separate rules for tax and financial reporting in the United Kingdom and the United States. The

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Massgeblichkeitsprinzip is not a *cause* of the main international accounting differences (the two groups in Figure 5.2 and Table 5.4); it is an *effect*.

Nevertheless, where tax strongly influences accounting, different national tax rules will result in different national accounting practices.

The accountancy profession

The strength and size of the profession seems to be caused by the need for audit and by the room left for professional regulation by the legal system.

Conclusion

If these three factors are largely influenced *by* accounting, the remaining potential independent variable is the financing system. It is suggested here that, apart from international influences (see below), this is the main explanatory variable for the most important international differences in financial reporting.

5.3.7 International influences

As noted at the beginning of this chapter, many nations have contributed to the development of accounting. In the case of some countries, ideas have been transferred wholesale. For example:

- Several African countries that are members of the (British) Commonwealth have accounting systems closely based on that of the British Companies Acts of 1929 or 1948.
- The French *plan comptable général* was introduced into France in the 1940s, based closely on a German precedent, and later into several former French colonies in Africa.
- The Japanese accounting system consists largely of a commercial code borrowed from Germany in the late nineteenth century, overlaid with US-style securities laws imposed in the late 1940s.

By the end of the twentieth century, international influences had begun to affect accounting in all countries, sometimes overwhelmingly. The globalization of markets had led to an increased need for internationally comparable accounting information. Where several large multinational companies are based in comparatively small countries (e.g. the Netherlands and Sweden), international influences are likely to be particularly great.

Many large European companies responded to internationalization by volunteering to use one of two sets of internationally recognized rules: the United States' generally accepted accounting principles (GAAP) and the international standards of the IASB. In general – in Europe at least – this usage has been restricted to the consolidated financial statements prepared for groups headed by listed companies. As noted in chapter 4, there are EU requirements in this area.

Another effect has been that national rule makers have been trying to reduce differences between their national rules and the above international norms. At the extreme, certain countries have adopted IFRSs as part of their national rules. These issues were noted in chapter 4 and are taken up again in section 5.5.

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5.4 Harmonization in the European Union

5.4.1 Introduction to harmonization

So far, this chapter has made it clear that there are major differences in the financial reporting practices of companies in different countries. This leads to great complications for those preparing, consolidating, auditing and interpreting published financial statements. Since the preparation of internal financial information often overlaps with the preparation of published information, the complications spread further. To combat this, several organizations throughout the world are involved in attempts to harmonize or standardize accounting.

'Harmonization' is a process of increasing the compatibility of accounting practices by setting bounds to their degree of variation. 'Standardization' appears to imply the imposition of a more rigid and narrow set of rules. However, within accounting these two words have almost become technical terms, and one cannot rely upon the normal difference in their meanings. Harmonization is a word that tends to be associated with the supranational legislation promulgated in the European Union, while standardization is a word often associated with the International Accounting Standards Board. In practice, the words are often used interchangeably.

It is necessary to distinguish between *de jure* harmonization (that of rules, standards, etc.) and *de facto* harmonization (that of corporate financial reporting practices). For any particular topic or set of countries, it is possible to have one of these two forms of harmonization without the other. For example, countries or companies may ignore the harmonized rules of standard setters or even lawmakers. By contrast, market forces persuade many companies in France or Switzerland to produce English-language financial reports that approximately follow Anglo-American practice.

The EU achieves its harmonizing objectives mainly through Directives (which must be incorporated into the laws of member states) and Regulations (which have direct effect). In the 1970s and 1980s attention was given to harmonizing national laws through Directives (see 5.4.2 and 5.4.3 below). During the 1990s, the EU began to take more notice of international standards, leading to a Regulation of 2002 requiring IFRSs for the consolidated statements of listed companies (see 5.4.4).

5.4.2 Relevant EU Directives

The relevant body of law for accounting is company law, and the concern of this section will be with the Directives on company law. These are listed in Table 5.11 with a brief description of their scope. The Fourth EU Directive will be discussed in more detail below, after an outline of the procedure for setting Directives. In addition to the Directives listed in Table 5.11, there are several others of relevance to accounting, e.g. the special versions of the Fourth Directive for banks and for insurance companies.

The exact effects of any Directive on a particular country will depend upon the laws passed by national legislatures. For example, there are dozens of provisions

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Table 5.11 EU Directives most relevant to corporate accounting

Directives on company law	*Draft dates*	*Date adopted*	*Topic*
Second	1970, 1972	1976	Separation of public companies, minimum capital, distributions
Fourth	1971, 1974	1978	Formats and rules of accounting
Seventh	1976, 1978	1983	Consolidated accounting
Eighth	1978	1984	Qualifications and work of auditors

in the Fourth Directive that begin with such expressions as 'member states may require or permit companies to … '

The Fourth Directive covers public and private companies. Its articles include those referring to valuation rules, formats of published financial statements, and disclosure requirements. It does not cover consolidation, which is left to the Seventh Directive (see chapter 14). The Fourth Directive's first draft was published in 1971, before the United Kingdom, Ireland and Denmark (let alone the later entrants) had joined the EU (or its predecessors). This initial draft was heavily influenced by German company law, particularly the *Aktiengesetz* of 1965. Consequently, for example, valuation rules were to be conservative, and formats were to be prescribed in detail. Financial statements were to obey the provisions of the Directive.

The UK, Ireland and Denmark joined the then 'common market' in 1973. The influence of Anglo-Saxon thinking was such that a much amended draft of the Fourth Directive was issued in 1974. This introduced the concept of the 'true and fair view'. Another change by 1974 was that some flexibility of presentation had been introduced. This process continued and, by the promulgation of the finalized Directive, the 'true and fair view' was established as a predominant principle in the preparation of financial statements (Article 2, paragraphs 2–5). In addition, the four basic principles (accruals, prudence, consistency and going concern) were made clearer than they had been in the 1974 draft (Article 31).

More rearrangement and summarization of items in the financial statements was made possible (Article 4). There were also calls for more notes in the 1974 draft than the 1971 draft, and more in the final Directive than in the 1974 draft (Articles 43–46). Another concern of Anglo-Dutch accountants was with the effect of taxation on Franco-German accounts. The extra disclosures called for by the 1974 draft about the effect of taxation are included in the final Directive (Articles 30 and 35).

The fact that member states may permit or require a type of inflation accounting is treated in more detail than in the 1974 draft (Article 33). As a further accommodation of Anglo-Dutch opinion, a 'Contact Committee' of EU and national civil servants is provided for. This was intended to answer the criticism that the Directive gives rise to laws that are not flexible to changing circumstances and attitudes. The Committee looks at practical problems arising from the implementation of the Directive, and makes suggestions for amendments (Article 52).

For over twenty years, the Fourth Directive was not changed in any substantial way. However, in 2001, it was amended to allow financial instruments to be

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valued at fair value with gains and losses taken to income, as is required by the international standard (IAS 39). In 2003, further amendments removed other incompatibilities with IFRSs.

A summary of the contents of the Fourth Directive is provided as Appendix B at the end of this book.

The Second Directive concerns a number of matters connected with share capital and the differences between public and private companies. For example, the Directive requires all member states to have separate legal structures for public and private companies and to have separate names for the companies. Table 4.1 in the previous chapter shows some company names in the EU. As noted in that chapter, a 'public' company in this context is one that is legally allowed to have a market in its securities, although it does not *need* to have one. For example, many PLCs, SAs or AGs are not listed. It is important to note that 'public' in this sense means neither listed nor anything to do with government. The implementation of the Directive led to the creation of the BV in the Netherlands and to the invention of the label 'PLC' in the United Kingdom.

The Seventh Directive concerns consolidated accounting, a topic considered in chapter 14. The Eighth Directive was watered down from its original draft, which might have greatly affected the training patterns and scope of work of accountants. However, its main effect now is to decide on who is allowed to audit accounts in certain countries. Table 5.12 shows the implementation dates of the two most important Directives. Norway, although not a member of the EU, has also implemented the Directives because it is required to do so as a member of the European Economic Area.

5.4.3 The example of accounting 'principles'

As an example of the evolution of the Fourth Directive's provisions, the requirements on accounting principles are examined here.

Table 5.12 Implementation of EU accounting Directives as laws

	Fourth	*Seventh*
Denmark	1981	1990
United Kingdom	1981	1989
France	1983	1985
Netherlands	1983	1988
Luxembourg	1984	1988
Belgium	1985	1990
Germany	1985	1985
Greece	1986	1987
Ireland	1986	1992
Portugal	1989	1991
Spain	1989	1989
Austria	1990	1990
Italy	1991	1991
Finland	1992	1992
Sweden	1995	1995
Norway	1998	1998

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Anglo-Dutch financial reporting was traditionally free of legal constraints in the area of principles of valuation and measurement, whether from company law, tax law or accounting plan. However, this was far from the case in some other EU countries, especially Germany whose 1965 *Aktiengesetz* (AktG) was a major source of the Fourth Directive. There are three levels of principle in the AktG, in the Directive and in the resulting laws of member states. The first and vaguest level consists of a statement of the overriding purpose of the financial statements. In the AktG (paragraph 149), this overriding purpose was to obey the provisions of the law. By the final 1978 version of the Directive, the overriding purpose had become to give a true and fair view. The evolution of this may be seen in Table 5.13. Pressure from Anglo-Dutch countries had caused its insertion in the 1974 draft and its dominance in the Directive in special circumstances (see

Table 5.13 The development of 'true and fair' in the Fourth Directive

Stage 1: 1965 *Aktiengesetz* (paragraph 149)

1. The annual financial statements shall conform to proper accounting principles. They shall be clear and well set out and give as sure a view of the company's financial position and its operating results as is possible pursuant to the valuation provisions.

Stage 2: 1971 Draft (Art 2) of the Directive

1. The annual accounts shall comprise the balance sheet, the profit and loss account and the notes on the accounts. These documents shall constitute a composite whole.
2. The annual accounts shall conform to the principles of regular and proper accounting.
3. They shall be drawn up clearly and, in the content of the provisions regarding the valuation of assets and liabilities and the layout of accounts, shall reflect as accurately as possible the company's assets, liabilities, financial position and results.

Stage 3: 1974 Draft (Art 2)

1. (As 1971 Draft)
2. The annual accounts shall give a true and fair view of the company's assets, liabilities, financial position and results.
3. They shall be drawn up clearly and in conformity with the provisions of this directive.

Stage 4: 1978 Final (Art 2)

1. (As 1971 Draft)
2. They shall be drawn up clearly and in accordance with the provisions of this Directive.
3. The annual accounts shall give a true and fair view of the company's assets, liabilities, financial position and profit or loss.
4. Where the application of the provisions of this Directive would not be sufficient to give a true and fair view within the meaning of paragraph 3, additional information must be given.
5. Where in exceptional cases the application of a provision of this Directive is incompatible with the obligation laid down in paragraph 3, that provision must be departed from in order to give a true and fair view within the meaning of paragraph 3. Any such departure must be disclosed in the notes on the accounts together with an explanation of the reasons for it and a statement of its effect on the assets, liabilities, financial position and profit or loss. The Member States may define the exceptional cases in question and lay down the relevant special rules.
6. The Member States may authorize or require the disclosure in the annual accounts of other information as well as that which must be disclosed in accordance with this Directive.

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paragraph 5 of the final version of the Directive, as shown in Table 5.13). It should be noted that neither the 'true and fair' concept nor the 'special circumstances' are defined. As mentioned in chapter 3 of this book, the IASB's Framework suggests that 'fair presentation' is much the same as 'a true and fair view'. The implication is that, above all, the financial statements should be in accordance with the facts and not be misleading.

Implementation of the 'true and fair' concept has been interpreted in different ways in different countries, both linguistically and philosophically.

Language

The expression 'true and fair view' (TFV) has found its way into the laws of the EU member states (plus Norway) in the ways shown in Table 5.14. Four countries have an apparently dual concept (e.g. true *and* fair), whereas twelve have a unitary concept. Investigation (Parker and Nobes, 1991) in the United Kingdom suggests that financial directors of large companies see TFV as unitary, whereas their auditors see it as dual: approximately, 'truth' is taken to mean that the financial statements are in accordance with the facts, and 'fairness' that they are not misleading (the two features mentioned above).

In most languages, but not Greek and Spanish, the indefinite article is used, leading to the conclusion that a number of different financial statements could all give *a* true and fair view of any particular state of affairs of profit or loss.

Philosophy

Accountants and lawyers in continental countries were, of course, aware of the forthcoming need to implement the TFV from at least the publication of the draft

Table 5.14 True and fair view

Country	*TFV in home language(s)*
UK (1947) Ireland (1963)	a true and fair view
Netherlands (1970) Belgium (1985)	een getrouw beeld
Denmark (1981)	et retvisende billede
France (1983) Luxembourg (1984) Belgium (1985)	une image fidèle (een getrouw beeld)
Germany (1985)	ein den tatsächlichen Verhältnissen entsprechendes Bild
Greece (1986)	tin pragmatiki ikona
Spain (1989)	la imagen fiel
Portugal (1989)	una imagem verdadeira e apropriada
Austria (1990)	ein möglichst getreues Bild
Italy (1991)	rappresentare in modo veritiero e corretto
Finland (1992)	oikeat ja riittävät tiedot
Sweden (1995)	en rättvisande bild
Norway (1998)	god regnskapsskikk

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Directive of 1974. It was a topic of conversation at international meetings and even of specific European conferences in the 1970s and 1980s. The idea that law should be departed from as a result of the opinion of directors and auditors is hard to accept even for 'English' lawyers let alone for 'Roman' lawyers.

The national stances towards the implementation of the Directive may also be classified into several types, with the UK and Germany as extremes:

- UK: TFV is used by directors/auditors in interpreting the law and standards or where there is no law or standard, and sometimes to override the law or standards. TFV can also be used by standard setters to make rules that override details of the law.
- Germany: TFV may be used by directors/auditors to interpret government requirements or in cases where there are no requirements. The law cannot be departed from in order to give a TFV. Some hold the view that TFV relates only to notes to the financial statements.

5.4.4 The EU Regulation of 2002

By the early 1990s, it had become clear, even to the European Commission, that Directives were too cumbersome and slow to achieve further useful harmonization. The Fourth Directive, agreed in 1978, did not cover several topics and it had been too complicated to amend it often. Furthermore, global harmonization had become more relevant than regional harmonization.

It had also become clear that, for large European companies, voluntary harmonization might focus on US rules over which the European Commission and other Europeans have no influence. Consequently, from the middle of the 1990s, the European Commission began to support the increasingly important efforts of the International Accounting Standards Committee (later, the IASB). The EU also had in mind the creation of powerful harmonized European financial markets.

In 2000, the Commission proposed the compulsory use of IFRSs for the consolidated statements of listed companies for 2005 onwards. This was agreed by the European Parliament and the Council of Ministers in 2002, in the form of a Regulation.

This Regulation also allows member states to extend the use of IFRSs compulsorily or optionally to unlisted companies and unconsolidated statements. For any companies falling under the Regulation, the national laws and standards on accounting are overridden. For other companies, the national rules (including the national implementations of the Directives) are still in effect.

5.5 The International Accounting Standards Board

5.5.1 Nature and purpose of the IASC/B

The IASB's predecessor, the International Accounting Standards Committee (IASC), was founded in 1973 and had a secretariat based in London. The original members were the accountancy bodies of nine countries: Australia, Canada,

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France, Germany, Japan, Mexico, the Netherlands, the United Kingdom (with Ireland) and the United States. By the millennium, there were over 140 member bodies from over 100 countries. Up until the end of 2000, the IASC was governed by a Board comprising representatives of 13 of the countries plus a few other relevant international organizations. From 2001, an independent Board of 14 (mostly full-time) members continues the IASC's work. The Board members are appointed by Trustees, drawn from the world's financial community, who represent the public interest.

It is the countries influenced by the Anglo-American tradition that are most familiar with setting accounting standards in the private sector. It is not surprising, then, that the working language of the IASB is English, that it is based in London, and that most standards are closely in line with, or compromise between, US and UK standards.

A list of IASB standards (collectively called IFRSs) is shown in Table 5.15. The process leading to the issue of an accounting standard includes the publication of an exposure draft prepared for public comment. A summary of the content of the IFRSs is given in Appendix C at the end of this book.

One particular issue concerning the content of IFRSs needs to be taken up here. IAS 1 (paragraph 10) requires above all else that financial statements must 'present fairly' the financial position, performance and cash flows of an enterprise. This is somewhat similar to the 'true and fair view' requirement examined earlier, and is also overriding – that is, in rare circumstances, if compliance with a requirement of a standard would be misleading it must be departed from. There must be full disclosures of any such departure, including the numerical effect.

5.5.2 Influence of the IASB

The importance of the IASB's work can be seen in three major areas:

- adoption of IFRSs as national rules;
- influence on national regulators;
- voluntary adoption of IFRSs by companies.

In several Asian and African countries of the (British) Commonwealth, IFRSs are adopted exactly or approximately by national standard setters. This is a feature of a number of developing countries (e.g. Nigeria) and a number of now well-developed countries with a British colonial history (e.g. Singapore). Adoption of IFRSs (sometimes with local variants) is an inexpensive way of setting standards that avoids unnecessary or accidental international differences.

The second point, namely the influence on regulators, is connected. Even for countries whose standard setters might think of themselves as leaders rather than followers (e.g. the United States and the United Kingdom), the IASB has acted as a focus for international collaboration. Several accounting standards have been set jointly by the IASB and one or more national standard setters. Many other standard setters have tried to avoid differences from IFRSs.

The third point, namely voluntary adoption by companies, can be seen particularly in continental Europe. From the early 1990s onwards, many large European companies (notably in France, Germany and Switzerland) have volunteered to

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Table 5.15 IASB documents (as of 1st January 2004)

Preface (revised 2002)

Framework for the preparation and presentation of financial statements (1989)

IAS	1	Presentation of financial statements
IAS	2	Inventories
IAS	7	Cash flow statements
IAS	8	Net profit or loss for the period, fundamental errors and changes in accounting policies
IAS	10	Events after the balance sheet date
IAS	11	Construction contracts
IAS	12	Income taxes
IAS	14	Segment reporting
IAS	16	Property, plant and equipment
IAS	17	Leases
IAS	18	Revenue
IAS	19	Employee benefits
IAS	20	Accounting for government grants and disclosure of government assistance
IAS	21	The effects of changes in foreign exchange rates
IAS	22	Business combinations
IAS	23	Borrowing costs
IAS	24	Related party disclosures
IAS	26	Accounting and reporting by retirement benefit plans
IAS	27	Consolidated financial statements and accounting for investments in subsidiaries
IAS	28	Accounting for investments in associates
IAS	29	Financial reporting in hyperinflationary economies
IAS	30	Disclosures in the financial statements of banks and similar financial institutions
IAS	31	Financial reporting of interests in joint ventures
IAS	32	Financial instruments: disclosure and presentation
IAS	33	Earnings per share
IAS	34	Interim financial reporting
IAS	35	Discontinuing operations
IAS	36	Impairment of assets
IAS	37	Provisions, contingent liabilities and contingent assets
IAS	38	Intangible assets
IAS	39	Financial instruments: recognition and measurement
IAS	40	Investment property
IAS	41	Agriculture
IFRS	1	First-time adoption of IFRS

use IFRSs because they believe that international investors prefer financial statements prepared that way.

By 2000, most of the biggest Swiss groups (e.g. Nestlé, Roche and Novartis) were using IFRSs for their consolidated statements. As examples of developing practice, the position in France for large companies for 1996 is shown in Table 5.16, and that for Germany for 1999 is shown in Table 5.17. It can be seen that US and IASB rules were contending for the position of world standard, and that national rules are likely to die out for the consolidated reporting of large listed companies. Of course, this is certainly the case for the EU for 2005 onwards.

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Table 5.16 Use of IASs in France

US GAAP			IAS	
'Compatible' national set of accounts		*Supplementary set of accounts (20-F or full annual report)*	*'Compatible' national set of accounts*	
Fully	*With exceptions*		*Fully*	*With exceptions*
Bull	Air Liquide	AB Productions	Bongrain	Aérospatiale
Chargeurs	Carrefour	Alcatel	Canal Plus	Béghin-Say
Dassault Systèmes	Danone	Alsthom	DMC	Cap Gémini
Elf	PSA	Axa-UAP	Essilor	Lafarge Coppée
Legrand	Technip	Bouygues	Moulinex	LVMH
Rhône-Poulenc		Offshore	Saint Louis	Renault
SEB		Business Objects	SEB	Saint-Gobain
		Coflexip	Technip	
		Dassault Systèmes	Thomson	
		Elf	Usinor-Sacilor	
		Flamel Technologies	Valéo	
		Genset		
		Ilog		
		LVMH		
		Péchiney		
		Usinor-Sacilor		
		SCOR		
		Total		

Source: Adapted from S. Zambon and W. Dick, *University of Reading Discussion Papers in Accounting, Finance and Banking*, No. 58, 1998.

From the late 1980s, the IASC had been in negotiation with the world's major stock market regulators through their international association called IOSCO (the International Organization of Securities Commissions). The objective was that IFRSs should become a global system accepted on all stock markets, particularly for foreign companies. IOSCO wanted improvements in IFRSs to be made, including the removal of options in standards and the coverage of several extra accounting topics. This process of improvement saw massive efforts by the IASC throughout the 1990s, was nearly completed with IAS 39 in 1998, and was fully completed with IAS 40 in 2000. In May 2000, IOSCO recommended acceptance of IFRSs to its members for financial reporting by foreign companies listed on the stock exchanges that they regulate. Many stock market regulators already accept IFRSs, and the US regulator (the SEC) is still considering the issue.

SUMMARY

- Today's financial reporting practices have developed over many centuries, with many countries contributing.
- Financial reporting practices can be classified into two main types of accounting system. However, for example, many large German companies no longer use the traditional German accounting system for their group accounting.
- International differences seem to be connected to different purposes of accounting, particularly a contrast between use by investors for decision

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Table 5.17 Use of IAS and US GAAP by the top 100 German companies (consolidated statements issued in early 2000)

IAS	*US*	*Reconciliation to US*
Aachener und Münchner Beteiligungs-AG	Continental	BASF
Adidas-Salomon	DaimlerChrysler	Deutsche Telekom
Allianz	DePfa Bank	Hoechst (from IAS)
Altana	Dürr	SGL Carbon
Bayer	Fresenius Medical Care	VEBA
Bayerische Hypo-und Vereinsbank	Gea	
Beiersdorf	Hannover Rückversicherungs	
BHF-Bank	Jungheinrich	
BHW Holding	SAP	
Commerzbank	Schwarz Pharma	
Deutsche Bank	Thyssen Krupp	
Dresdner Bank	Vossloh	
Dyckerhoff		
Ergo Versicherungsgruppe		
Gerresheimer Glas		
Heidelberger Druck		
Heidelberger Zement		
Henkel		
Hochtief		
Hoechst		
Lufthansa		
MAN		
Merck		
Münchener Rückversicherungs-Gesellschaft		
Preussag		
Puma		
Rhön-Klinikum		
RWE		
Schering		
Schmalbach-Lubeca		
SKW Trostberg		
Tarkett Sommer		
VIAG		
Wella		

Source: Adapted from J. Spanheimer and C. Koch, *Die Wirtschaftsprüfer*, 1 April 2000, p. 310.

making and use for the legal purposes of creditor protection and the calculation of taxable income.

- In Europe, some countries (e.g. the United Kingdom) have large stock markets and large numbers of auditors. Other countries (e.g. Germany) have much smaller stock markets and numbers of auditors.
- Efforts to harmonize financial reporting within the EU have been slow because of the need to reach agreement on the relevant EU Directives among the member states. This has also led to many options and omissions in the Directives. The spread of the requirement to give a true and fair view seems to

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be harmonization of form but not of substance. Also, the idea of harmonizing only within the EU is perhaps now out of date.

- EU progress has been made with some standardization of formats of financial statements and particularly with group accounting issues. The EU is now promoting the use of international standards.
- The IASC's attempts at harmonization were initially hampered by the problems of achieving international agreement and by the lack of endorsement mechanisms. However, with the support of stock market regulators and the spread of a global capital market, IFRSs are now extensively used. They are compulsory in the EU for the consolidated statements of listed companies from 2005.

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? Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

5.1 Private-sector professional accountancy bodies were invented by:

(a) The Romans.
(b) Fourteenth-century Italians.
(c) Nineteenth-century Britons.
(d) Twentieth-century Americans.

5.2 In which of the following countries are depreciation charges most closely tied to tax rules?

(a) United States.
(b) United Kingdom.
(c) Germany.
(d) Netherlands.

5.3 Which country's predominant accounting system generally has the most conservative income calculations?

(a) United States.
(b) United Kingdom.
(c) Netherlands.
(d) Japan.

5.4 Which country has the smallest number of domestic listed companies?

(a) United States.
(b) United Kingdom.
(c) Australia.
(d) Germany.

5.5 Which country has the smallest number of professional auditors?

(a) United States.
(b) United Kingdom.
(c) Canada.
(d) Japan.

5.6 International differences of financial reporting might cause difficulties for:

(a) Investors.
(b) Bankers.
(c) Auditors of multinational companies.
(d) Managers of multinational companies.
(e) All of the above.

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5.7 The EU's Fourth Directive (on company law) was published in the following decade:

(a) 1960s.
(b) 1970s.
(c) 1980s.
(d) 1990s.

5.8 Which country was not a member of the Common Market (now the EU) when the first draft of the Fourth Directive was published in 1971?

(a) France.
(b) Italy.
(c) United Kingdom.
(d) Belgium.

5.9 The IASC was founded in:

(a) 1968.
(b) 1973.
(c) 1978.
(d) 1985.

5.10 In which country did the smallest proportion of the largest 100 companies comply with IASs in 2000?

(a) France.
(b) United Kingdom.
(c) Germany.
(d) Switzerland.

5.11 Until 2001, the representatives on the Board of the IASC were mainly appointed by:

(a) Accountancy bodies.
(b) Governments.
(c) National standard setters.
(d) Stock exchanges.

? Exercises

Feedback on the first two of these exercises is given in Appendix E.

5.1 Explain how international differences in the ownership and financing of companies could lead to differences in financial reporting.

5.2 Explain for whom international differences in financial reporting are a problem. Describe any ways you know about in which those who face such problems are dealing with them.

5.3 Several factors have been suggested as related to financial reporting differences, i.e. legal systems, providers of finance, taxation, the accountancy profession, and accidents of history.

(a) Within your knowledge and experiences, which factors do you believe to be the most important, and why?
(b) To what extent do you think your views on (a) above have been influenced by your own national environment?

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5.4 'International accounting classification systems are, by their very nature, simplistic.' Discuss.

5.5 By reference to any of the countries in Figures 5.1 or 5.2 with which you are familiar, comment on the apparent validity of the groupings. Make notes of points for and against the particular positions of the countries concerned. Be ready to update these notes as you read later chapters.

5.6 Do international differences in the rules for the calculation of taxable income cause accounting differences, or is the influence the other way round?

5.7 'The true and fair view requirement is now established in all European Union countries, and so the aim of financial reporting has been harmonized.' Discuss.

5.8 (a) Outline the objectives and achievements of the EU in the area of financial reporting.
(b) Outline the objectives and achievements of the IASB and its predecessor in the area of financial reporting.
(c) Do your answers to (a) and (b) suggest movement in the same direction: (i) in the 1980s, and (ii) now?

5.9 In which European countries have the standards of the IASB had the greatest influence?

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6

The contents of financial statements

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OBJECTIVES

Having thoroughly worked through this chapter you should be able to:

- outline the main component parts of published annual financial statements of corporations;
- describe and discuss the main requirements of IAS 1 as regards the contents of published financial statements;
- outline the relationship of cash flow statements to other financial statements;
- discuss the concept of comprehensive income, and demonstrate an understanding of the issues related to a single overall performance statement;
- outline and appraise disclosure requirements under IAS GAAP in relation to segments, interim financial reports, earnings per share and discontinuing operations;
- compare the above requirements with those in national jurisdictions within your experience, and comment on the influence of the EU Fourth Directive.

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6.1 Introduction

As has already been explored in chapter 2, the two most fundamental components of a set of financial accounts are the balance sheet and the income statement. The balance sheet presents a statement of the assets, liabilities and owner's equity, at the balance sheet date, as shown by the accounting records after the application of the conventions and practices discussed in chapter 3. The income statement has as its focus the financial performance of the reporting period, taking into account the revenues and expenses of the period, derived according to those conventions.

More recently, a further related statement has come to be regarded as important, particularly in published financial statements, which is the main context of this book. This is some form of statement of comprehensive income. Such a statement provides an overall picture of the changes in owner's equity over the period. One of the reasons for change in the owner's equity is the net profit (or loss) for the period, but a wide variety of other items involving changes in asset or liability figures, and therefore in owner's equity as well, may have been recorded. The statement of comprehensive income is designed to provide a convenient summary of all such items. One other purpose of this statement is to try to reduce the 'bottom line syndrome', i.e. the tendency for management and for analysts and other readers of financial statements to concentrate too much on the 'net earnings' figure at the bottom of an income statement.

One thing that the above statements do not do, as briefly explored in section 2.5, is provide a focus on the cash position. To remedy this, a cash flow statement is widely regarded as an essential component. This statement seeks to highlight the movements of cash into and out of the business during the period under review.

Why it matters *It is perfectly possible for a business operation to be profitable in the short term and still run out of money, because of delayed receipts or advance payments, or because of investment policies. It is, of course, also possible for a business to be making losses whilst still having large amounts of cash and, in the short term, positive annual cash flows. A cash flow statement is thus an essential part of the overall information package that is necessary for business appraisal.*

The typical annual financial report, particularly for listed enterprises, contains a number of additional sections. These are likely to include discussions by the company chairman and the management team of the activities and results of the business, and various graphs, photographs of relevance (or otherwise) to the business, and other material designed to ensure that the readers of the package receive the 'right' impression of the performance of the business and the management. It is unclear to what extent the company and its auditors are legally responsible for the validity and overall fairness of these voluntary sections. Formally, the auditors are required to give an opinion on the financial statements (including the notes) and to check that the directors' report is consistent with those statements. However, there is some evidence that many readers of financial statements give more attention to the voluntary material than to the detailed

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formal financial information. Logic would therefore suggest that it is the overall impression of the complete 'annual report' that needs to be true and fair.

The next section of this chapter looks in some detail at the general disclosure requirements for the two most basic statements, with a particular focus on IAS 1. Sections 6.3, 6.4 and 6.5 outline the other major requirements existing and emerging at the present time.

6.2 Basic financial statements

As discussed in chapter 5, both IAS 1 and the EU Fourth Directive have a significant effect on the general contents of basic financial statements. In the context of this particular chapter, which is concerned with the content and layout of financial statements, IAS 1 (which is designed to be operable within existing legal format requirements in many countries), is relatively general and flexible. Within Europe, it is the EU Fourth Directive that has imposed much of the regulatory requirement and practice in this area. The Fourth Directive therefore requires careful consideration, for two related reasons. First, the Directives have been enacted, more or less strictly, into the national laws of European Union member countries. They are therefore relevant for those financial statements not prepared under the EU Regulation of 2002 (e.g. still relevant in many countries for all unconsolidated statements). Even where the Regulation is being followed, national practices under IFRS may reflect preferences formed by national implementations of the Directives. For non-EU countries, there is relevance in that several elements of the Fourth Directive have influenced IAS 1.

The approach we have followed here is to structure our coverage on IAS 1 (as revised in 2003), but to include all necessary detail from the Fourth Directive (as revised in 2003) in the appropriate places. The EU Seventh Directive is referred to in chapter 14 on group accounts.

IAS 1 requires that financial statements that claim to follow IFRSs should be clearly distinguished from any other information that is included in the same published document. Figures, components and separate pages must be fully and clearly described. Financial statements should be presented at least annually, normally for a twelve-month period, and any exceptions (such as a change in reporting date following an acquisition by another enterprise) should be clearly explained.

6.2.1 Balance sheets

It is usual in Europe (and required by the Fourth Directive even though not by IAS 1) for a balance sheet to present current and non-current assets, and current and non-current liabilities, as separate classifications on the face of the balance sheet. When an enterprise chooses not to make this analysis, assets and liabilities should still be presented broadly in order of their liquidity, although the IAS does not specify 'which way up' the liquidity analysis should go. For example, it is generally European practice for assets to end with cash (which is required by the Directive), whereas it is North American, Japanese and Australian practice to start

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with cash. Whichever method of presentation is adopted, an enterprise should disclose the amounts included in each item that are expected to be recovered or settled before, and after, twelve months.

IAS 1 states that an asset should be classified as current when it:

- is expected to be realized in, or is held for sale or consumption in, the normal course of the entity's operating cycle;
- is held primarily for trading purposes;
- is expected to be realized within twelve months of the balance sheet date; or
- is cash or a cash equivalent that is not restricted in its use.

The Fourth Directive concentrates on the first of these criteria by defining fixed assets as those intended for continuing use in the business, and all other assets as current. It therefore follows that, if an enterprise has an operating cycle greater than twelve months, then an asset expected to be realized within that operating cycle is a current asset even if the expected realization is more than twelve months away.

Although the wording on the matter is perhaps not as clear as it might be, a non-current asset remains non-current throughout its useful life to the enterprise, as it is not held primarily for trading purposes. It does not eventually become 'current' merely because its expected disposal is within less than twelve months. The IASB definition also implies that the currently due portion of a long-term non-trading receivable is similarly not to be reclassified as current.

Where liabilities are classified, a comparable distinction is required. IAS 1 requires that a liability should be classified as a current liability when it:

- is expected to be settled in the normal course of the entity's operating cycle; or
- is due to be settled within twelve months of the balance sheet date.

This time, the Fourth Directive chooses the latter definition only. In the case of liabilities the 'current' portion of long-term interest-bearing liabilities is generally to be classified as current, unless, in effect, refinance is both assured and demonstrable.

A number of items, if material, should be shown as separate totals on the face of the balance sheet itself. These are specified in IAS 1 as follows:

- property, plant and equipment
- investment property
- intangible assets
- financial assets (unless included under other headings below)
- investments accounted for using the equity method (see chapter 14)
- biological assets
- inventories
- trade and other receivables
- cash and cash equivalents
- trade and other payables
- provisions
- financial liabilities (unless included under other headings)
- tax liabilities and assets
- minority interest (see chapter 14)
- issued capital and reserves.

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The above represents a minimum. Additional line items, headings and subtotals should also be included on the face of the balance sheet when any other IFRS requires it, or when such additional presentation is necessary in order to 'present fairly' the enterprise's financial position.

The Fourth Directive sets out considerably more detail in its specifications regarding balance sheets. It requires that member states should prescribe one or both of the layouts specified by its Articles 9 and 10. In 2003, the Directive was amended to allow a current/non-current split based on liquidity. Article 9, reproduced in Table 6.1, gives a 'horizontal' format with the debits on one side and the credits on the other, following the general continental European tradition. Incidentally, the word 'Liabilities' which heads the right-hand side (or lower half) of the balance sheet is a poor translation of the French '*passif*' or German '*passiv*' (see chapter 11). Article 10, reproduced in Table 6.2, gives a 'vertical' format of the type more traditional in the UK. Companies are required to show the items in these tables in the order specified, except that the headings preceded by Arabic numbers may be combined or taken to the Notes. The chapters in Part 2 of this book explain the meaning of the various items.

Table 6.1 The EU Fourth Directive; horizontal balance sheet format

Assets

A. Subscribed capital unpaid

B. Formation expenses

C. Fixed assets

I *Intangible assets*
1. Costs of research and development.
2. Concessions, patents, licences, trade marks and similar rights and assets.
3. Goodwill, to the extent that it was acquired for valuable consideration.
4. Payments on account.

II *Tangible assets*
1. Land and buildings.
2. Plant and machinery.
3. Other fixtures and fittings, tools and equipment.
4. Payments on account and tangible assets in course of construction.

III *Financial assets*
1. Shares in affiliated undertakings.
2. Loans in affiliated undertakings.
3. Participating interests.
4. Loans to undertakings with which the company is linked by virtue of participating interests.
5. Investments held as fixed assets.
6. Other loans.
7. Own shares.

D. Current assets

I *Stocks*
1. Raw materials and consumables.
2. Work in progress.
3. Finished goods and goods for resale.
4. Payments on account.

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Table 6.1 *Continued*

Assets

II *Debtors*
(Amounts becoming due and payable after more than one year must be shown separately for each item.)
1. Trade debtors.
2. Amounts owed by affiliated undertakings.
3. Amounts owed by undertakings with which the company is linked by virtue of participating interests.
4. Other debtors.
5. Subscribed capital called but not paid.
6. Prepayments and accrued income.

III *Investments*
1. Shares in affiliated undertakings.
2. Own shares.
3. Other investments.

IV *Cash at bank and in hand*

E. Prepayments and accrued income

F. Loss for the financial year

Liabilities

A. Capital and reserves

I *Subscribed capital*
II *Share premium account*
III *Revaluation reserve*
IV *Reserves*
1. Legal reserve.
2. Reserve for own shares.
3. Reserves provided for by the articles of association.
4. Other reserves.

V *Profit or loss brought forward*
VI *Profit or loss for the financial year*

B. Provisions
1. Provisions for pensions and similar obligations.
2. Provisions for taxation.
3. Other provisions.

C. Creditors
(Amounts becoming due and payable within one year and amounts becoming due and payable after more than one year must be shown separately for each item and for the aggregate of these items.)
1. Debenture loans, showing convertible loans separately.
2. Amounts owed to credit institutions.
3. Payments received on account of orders in so far as they are now shown separately as deductions from stocks.
4. Trade creditors.
5. Bills of exchange payable.
6. Amounts owed to affiliated undertakings.
7. Amounts owed to undertakings with which the company is linked by virtue of participating interests.
8. Other creditors including tax and social security.
9. Accruals and deferred income.

D. Accruals and deferred income

E. Profit for the financial year

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Table 6.2 The EU Fourth Directive; vertical balance sheet format

A. Subscribed capital unpaid

B. Formation expenses

C. Fixed assets

I *Intangible assets*

1. Costs of research and development.
2. Concessions, patents, licences, trade marks and similar rights and assets.
3. Goodwill, to the extent that it was acquired for valuable consideration.
4. Payments on account.

II *Tangible assets*

1. Land and buildings.
2. Plant and machinery.
3. Other fixtures and fittings, tools and equipment.
4. Payments on account and tangible assets in course of construction.

III *Financial assets*

1. Shares in affiliated undertakings.
2. Loans to affiliated undertakings.
3. Participating interests.
4. Loans to undertakings with which the company is linked by virtue of participating interests.
5. Investments held as fixed assets.
6. Other loans.
7. Own shares.

D. Current assets

I *Stocks*

1. Raw materials and consumables.
2. Work in progress.
3. Finished goods and goods for resale.
4. Payments on account.

II *Debtors*

(Amounts becoming due and payable after more than one year must be shown separately for each item.)

1. Trade debtors.
2. Amounts owed by affiliated undertakings.
3. Amounts owed by undertakings with which the company is linked by virtue of participating interests.
4. Other debtors.
5. Subscribed capital called but not paid.
6. Prepayments and accrued income.

III *Investments*

1. Shares in affiliated undertakings.
2. Own shares.
3. Other investments.

IV *Cash at bank and in hand*

E. Prepayments and accrued income

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Table 6.2 ***Continued***

F. Creditors: amounts becoming due and payable within one year

1. Debenture loans, showing convertible loans separately.
2. Amounts owed to credit institutions.
3. Payments received on account of orders in so far as they are not shown separately as deductions from stocks.
4. Trade creditors.
5. Bills of exchange payable.
6. Amounts owed to affiliated undertakings.
7. Amounts owed to undertakings with which the company is linked by virtue of participating interests.
8. Other creditors including tax and social security.
9. Accrual and deferred income.

G. Net current assets/liabilities

H. Total assets less current liabilities

I. Creditors: amounts becoming due and payable after more than one year

1. Debenture loans, showing convertible loans separately.
2. Amounts owed to credit institutions.
3. Payments received on account of orders in so far as they are now shown separately as deductions from stocks.
4. Trade creditors.
5. Bills of exchange payable.
6. Amounts owed to affiliated undertakings.
7. Amounts owed to undertakings with which the company is linked by virtue of participating interests.
8. Other creditors including tax and social security.
9. Accruals and deferred income.

J. Provisions

1. Provisions for pensions and similar obligations.
2. Provisions for taxation.
3. Other provisions.

K. Accruals and deferred income

L. Capital and reserves

I *Subscribed capital*
II *Share premium account*
III *Revaluation reserve*
IV *Reserves*

1. Legal reserve.
2. Reserve for own shares.
3. Reserves provided for by the articles of association.
4. Other reserves.

V *Profit or loss brought forward*
VI *Profit or loss for the financial year*

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In the European Union, companies that fall below a given size limit, which is updated as circumstances change, may be permitted by the laws of member states to produce abridged accounts. As far as the balance sheet is concerned, these would consist of only those items preceded by letters and roman numerals in Tables 6.1 and 6.2.

In some cases, more specific international standards provide precise requirements for presentation, as illustrated in a number of the chapters in Part 2 of this book. It should be remembered that such requirements do not apply to immaterial items. The fundamental requirement is to give a fair presentation, and the guiding factor should be not to mislead the careful reader of the financial statements.

6.2.2 Income statements

As with the balance sheet, IAS 1 requires certain disclosures on the face of the income statement, and other disclosures either on the face of the statement or in the Notes, at the discretion of the reporting enterprise.

As a minimum, the face of the income statement should include line items that present the following amounts:

- revenues
- finance costs
- share of the after-tax profits and losses of associates and joint ventures accounted for using the equity method (see chapter 14)
- pre-tax gain or loss on disposal of assets/liabilities of discontinuing operations
- tax expense
- profit or loss
- minority interest (see chapter 14)
- net profit or loss.

Additional line items, headings and subtotals should be presented on the face of the income statement when required by more specific IFRSs, or when such additions are necessary to present fairly the enterprise's financial performance. IAS 1 explicitly accepts that considerations of materiality and the nature of the enterprise's operations may require additions to, deletions from, or amendments of descriptions within the above list.

Beyond all the above, there is a requirement that an enterprise should present, either on the face of the income statement (which is 'encouraged' but not obligatory under IAS 1), or in the Notes to the income statement, an analysis using a classification based on either the nature of expenses or their function within the enterprise. The implications of this distinction between classification by nature and classification by function are conveniently illustrated by turning to the Fourth Directive's specifications for the income statement. The Directive requires that member states allow one or more of the four layouts given in its Articles 23 to 26.

These four layouts are necessary to accommodate the possibility of following either an analysis by nature or an analysis by function, combined with either a horizontal type presentation or a vertical type presentation. Table 6.3 classifies

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Table 6.3 The EU Fourth Directive; vertical profit and loss account by nature

Item	*Description*
1	Net turnover.
2	Variation in stocks of finished goods and in work in progress.
3	Work performed by the undertaking for its own purposes and capitalized.
4	Other operating income.
5	(a) Raw materials and consumables.
	(b) Other external charges.
6	Staff costs:
	(a) wages and salaries;
	(b) social security costs with a separate indication of those relating to pensions.
7	(a) Value adjustments in respect of formation expenses and of tangible and intangible fixed assets.
	(b) Value adjustments in respect of current assets, to the extent that they exceed the amount of value adjustments which are normal in the undertaking concerned.
8	Other operating charges.
9	Income from participating interests, with a separate indication of that derived from affiliated undertakings.
10	Income from other investments and loans forming part of the fixed assets, with a separate indication of that derived from affiliated undertakings.
11	Other interest receivable and similar income with a separate indication of that derived from affiliated undertakings.
12	Value adjustments in respect of financial assets and of investments held as current assets.
13	Interest payable and similar charges, with a separate indication of those concerning affiliated undertakings.
14	Tax on profit or loss on ordinary activities.
15	Profit or loss on ordinary activities after taxation.
16	Extraordinary income.
17	Extraordinary charges.
18	Extraordinary profit or loss.
19	Tax on extraordinary profit or loss.
20	Other taxes not shown under the above items.
21	Profit or loss for the financial year.

the expense items by nature showing, for example, staff costs as a single separate figure. Table 6.4 classifies by function. Thus, for example, staff costs as a total are not shown, being split up between the various functional heads related to staff activity, such as distribution and administration.

The formats in Tables 6.3 and 6.4 are vertical in style, treating the revenues (credits) as pluses and the expenses (debits) as minuses. However, the Directive allows a horizontal double-entry style of income statement, as illustrated in chapter 2. Table 6.5 shows the horizontal version of the by-nature format, i.e. a re-arrangement of Table 6.3. Although the Directive also allows a horizontal by-function format, this is not used in practice and is not illustrated here.

In the Directive's formats (and therefore in EU national laws), there are lines for 'extraordinary' items. These are defined, rather vaguely, as those outside ordinary activities. In France and Italy, such activities were taken to include the sale of fixed assets, but in the UK ordinary was defined so widely as to leave nothing as extraordinary. The revision to IAS 1 of 2003 abolished the concept of extraordinary.

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Table 6.4 The EU Fourth Directive; vertical profit and loss account by function

Item	*Description*
1	Net turnover.
2	Cost of sales (including value adjustments).
3	Gross profit or loss.
4	Distribution costs (including value adjustments).
5	Administrative expenses (including value adjustments).
6	Other operating income.
7	Income from participating interests, with a separate indication of that derived from affiliated undertakings.
8	Income from other investments and loans forming part of the fixed assets, with a separate indication of that derived from affiliated undertakings.
9	Other interest receivable and similar income, with a separate indication of that derived from affiliated undertakings.
10	Value adjustments in respect of financial assets and of investments held as current assets.
11	Interest payable and similar charges, with a separate indication of those concerning affiliated undertakings.
12	Tax on profit or loss on ordinary activities.
13	Profit or loss on ordinary activities after taxation.
14	Extraordinary income.
15	Extraordinary charges.
16	Extraordinary profit or loss.
17	Tax on extraordinary profit or loss.
18	Other taxes not shown under the above items.
19	Profit or loss for the financial year.

Activity 6.A Consider the relative advantages and usefulness of the four Directive formats for the income statement.

Feedback As regards the financial reports of large listed enterprises, there is no doubt that the vertical presentations are increasingly predominant. As between the by-nature and by-function classification, both methods have advantages. Showing expenses by nature requires less analysis and less judgement but is arguably less informative. It fails to reveal the cost of sales, and therefore the gross profit, and it has the disadvantage that it might seem to imply (see Tables 6.3 or 6.5) that changes in inventory are an expense or a revenue in their own right, whereas they are an adjustment to purchases.

However, because information on the nature of expenses is regarded as useful in predicting future cash flows, IAS 1 and the Directive require additional disclosure on the nature of expenses, including depreciation and amortization expenses and staff costs, when the by-function classification is used. Table 6.6 shows the formats typically, but not universally, used in certain countries. Note that the different formats do not lead to differences in reported net income. Different formats do not imply different measurements.

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Table 6.5 The EU Fourth Directive; horizontal profit and loss account by nature

Item	Description
A. Charges	
1	Reduction in stocks of finished goods and in work in progress.
2	(a) raw materials and consumables;
	(b) other external charges.
3	Staff costs:
	(a) wages and salaries;
	(b) social security costs with a separate indication of those relating to pensions.
4	(a) Value adjustments in respect of formation expenses and of tangible and intangible fixed assets.
	(b) Value adjustments in respect of current assets, to the extent that they exceed the amount of value adjustments which are normal in the undertaking concerned.
5	Other operating charges.
6	Value adjustments in respect of financial assets and of investments held as current assets.
7	Interest payable and similar charges, with a separate indication of those concerning affiliated undertakings.
8	Tax on profit or loss on ordinary activities.
9	Profit or loss on ordinary activities after taxation.
10	Extraordinary charges.
11	Tax on extraordinary profit or loss.
12	Other taxes not shown under the above items.
13	Profit or loss for the financial year.
B. Income	
1	Net turnover.
2	Increase in stocks of finished goods and in work in progress.
3	Work performed by the undertaking for its own purposes and capitalized.
4	Other operating income.
5	Income from participating interests, with a separate indication of that derived from affiliated undertakings.
6	Income from other investments and loans forming part of the fixed assets, with a separate indication of that derived from affiliated undertakings.
7	Other interest receivable and similar income, with a separate indication of that derived from affiliated undertakings.
8	Profit or loss on ordinary activities after taxation.
9	Extraordinary income.
10	Profit or loss for the financial year.

Table 6.6 Typical income statement formats by country

Vertical by nature	*Vertical by function*	*Horizontal by nature*
Finland	Denmark	Belgium
Germany (commonly)	Germany (IFRS)	France
Italy	Netherlands	Spain
Norway	Sweden	
	United Kingdom	
	United States	

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Figure 6.1 Consolidated statement of income of Nokia, year ended 31 December 2002

	2002 EURm	*2001 EURm*	*2000 EURm*
Net sales	**30,016**	31,191	30,376
Cost of sales	**−18,278**	−19,787	−19,072
Research and development expenses	**−3,052**	−2,985	−2,584
Selling, general and administrative expenses	**−3,239**	−3,523	−2,804
Customer finance impairment charges, net	**−279**	−714	–
Impairment of goodwill	**−182**	−518	–
Amortization of goodwill	**−206**	−302	−140
Operating profit	**4,780**	3,362	5,776
Share of results of associated companies	**−19**	−12	−16
Financial income and expenses	**156**	125	102
Profit before tax and minority interests	**4,917**	3,475	5,862
Tax	**−1,484**	−1,192	−1,784
Minority interests	**−52**	−83	−140
Net profit	**3,381**	2,200	3,938

Figures 6.1 and 6.2 show the published income statement and balance sheet for Nokia (of Finland) for the year 2002, by way of illustration. Notice that they are very summarized; there is further detail in the Notes.

6.2.3 Notes to the financial statements

The Notes to the financial statements are where everything else is shown. IAS 1 summarizes the functions of the Notes as being:

- to present information about the basis of preparation of the financial statements and the specific accounting policies used for significant transactions and events;
- to disclose any information required that is not included elsewhere;
- to provide additional information, which is not presented on the face of the financial statements but which is necessary to ensure a fair presentation.

Notes to the financial statements need to be presented systematically, with each item on the face of the balance sheet, income statement and cash flow statement cross-referenced to any related information in the Notes. It is usual to begin the Notes with a statement of compliance with the appropriate set of accounting principles. Each specific accounting policy that has been used, and the understanding of which is necessary for a proper understanding of the financial statements, is then described. The remainder of the Notes then give the required detailed disclosures, in the order corresponding to the item's appearance in the financial statements themselves.

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Figure 6.2 Consolidated balance sheet of Nokia, as at 31 December 2002

	2002 *EURm*	*2001* *EURm*
ASSETS		
Fixed assets and other non-current assets		
Capitalized development costs	**1,072**	893
Goodwill	**476**	854
Other intangible assets	**192**	237
Property, plant and equipment	**1,874**	2,514
Investments in associated companies	**49**	49
Available-for-sale investments	**238**	399
Deferred tax assets	**731**	832
Long-term loans receivable	**1,056**	1,128
Other non-current assets	**54**	6
	5,742	6,912
Current assets		
Inventories	**1,277**	1,788
Accounts receivable	**5,385**	5,719
Prepaid expenses and accrued income	**1,156**	1,480
Other financial assets	**416**	403
Available-for-sale investments	**7,855**	4,271
Bank and cash	**1,496**	1,854
	17,585	15,515
Total assets	**23,327**	22,427
SHAREHOLDERS' EQUITY AND LIABILITIES		
Shareholders' equity		
Share capital	**287**	284
Share issue premium	**2,225**	2,060
Treasury shares, at cost	**−20**	−21
Translation differences	**135**	326
Fair value and other reserves	**−7**	20
Retained earnings	**11,661**	9,536
	14,281	12,205
Minority interest	**173**	196
Long-term liabilities		
Long-term interest-bearing liabilities	**187**	207
Deferred tax liabilities	**207**	177
Other long-term liabilities	**67**	76
	461	460
Current liabilities		
Short-term borrowings	**377**	831
Accounts payable	**2,954**	3,074
Accrued expenses	**2,611**	3,477
Provisions	**2,470**	2,184
	8,412	9,566
Total shareholders' equity and liabilities	**23,327**	22,427

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Activity 6.B Depending on your own particular circumstances, nationality and domicile, you may be interested in the interpretation of financial statements prepared under the laws, rules and norms of one or more national jurisdictions. You are in a much better position than the authors to investigate your 'local' scenario.

There are two respects in which you should explore the situation in relation to the general principles and the IFRS requirements that are described here. You have already been invited in chapter 4 to consider the balance between legal, professional and other possible regulatory influences within your own environment. Now you can investigate local regulations and compare them with the international considerations discussed here. The optimal timing of this comparison will depend on your particular needs and study programme. If you have already studied a set of national regulations, then you should now compare the presentation and disclosure requirements contained therein regarding balance sheet and income statement with those outlined above. You should then ask yourself two questions:

1. What are the reasons for the differences?
2. Are the differences justified?

Feedback Because of the nature of the task set, no detailed reply can be given here. The reasons for the differences will be essentially historical and contextual, and the earlier chapters of Part 1 should provide the necessary framework for your assessment. Whether or not you think the differences are justified is of course a more open question. It is likely in most cases that the differences can be rationalized by historical considerations, but that is not the same thing as saying that the differences will necessarily survive in a dynamic global economy. This task is designed for discussion amongst students, or between students and tutors.

6.3 Comprehensive income

There has been considerable discussion in recent years over the issue of reporting total, or comprehensive, income. The problem stems from the traditional view that only realized profits (see chapter 3) should be included in the income statement, and therefore in reported 'earnings'. However, there are two problems here. First, the definition of 'realized' is unclear. Second, a wide variety of other value changes affecting assets and liabilities may have taken place during the year, and fair presentation may well require their separate reporting. Such value changes will inevitably affect owner's equity, which is the difference between assets and liabilities. It can be persuasively argued that any event, other than a transfer of resources between the owners and the enterprise (in either direction), that alters the ownership claim on the business must in some sense represent a gain or a loss recognized in the year (see section 2.4). These gains or losses are all part of 'comprehensive income'.

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There has been a tendency in the past – perhaps shared by both preparers and users of financial statements – to focus attention on the income statement in general, and the final net profit figure in particular. This probably had its origin in the view, arguably valid from a creditor perspective, that only gains received in cash or near-cash are worthy of any credence. However, other recognized changes in assets and liabilities carry significant information content. It should also be remembered, as mentioned earlier in Part 1, that the IASB, explicitly in its Framework and generally in recent standards, puts emphasis on asset and liability definitions and measurement, rather than on revenue and expense definitions and measurement. That is, for example, increases in assets are recognized as income.

This thinking led to the idea of an additional reporting statement. Broadly speaking there are two ways of proceeding, according to IAS 1. The first is to publish what is known in the UK as a statement of total recognized gains and losses. Such a statement should show the net profit or loss for the period, each other item of income, expense, gain or loss, and the cumulative effect of changes in accounting policy and the correction of fundamental errors. If such a statement is published, then IAS 1 requires further disclosures in the Notes of capital transactions with owners and distributions to owners. A statement like this was required in the United Kingdom from 1993. A simple example is shown in Figure 6.3.

The alternative method of presentation allowed by IAS 1 is to include all the information required above in a single statement known as a 'statement of changes in equity'. A possible format for such a statement is shown in Figure 6.4. This includes items which are clearly not financial performance of the year, but it does present as much information as possible in one place in a manner which helps the reader not to miss relevant information concerning the total change in equity over the period.

Figure 6.3 Statement of total recognized gains and losses as used in the UK

	2004 (£m)
Profit for the financial year	29
Unrealized surplus on revaluation of properties	4
Unrealized (loss)/gain on investment	(3)
	30
Currency translation differences on foreign currency net investments	(2)
Total recognized gains and losses relating to the year	28
Prior-year adjustment	(10)
Total gains and losses recognized since last annual report	18

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Figure 6.4 XYZ Group: Statement of changes in equity (possible format under IAS 1)

	Total
Balance at 31 December 20X3	X
Changes in accounting policy	(X)
Restated balance	X
Surplus on revaluation of properties	X
Deficit on revaluation of investments	(X)
Currency translation differences	X
Net gains and losses not recognized in the income statement	X
Net profit for the period	X
Dividends	(X)
Issue of share capital	X
Balance at 31 December 20X4	X

Why it matters *The argument in favour of a statement of comprehensive income is in essence the point that **all** information that has relevance to the determination of business wealth, and therefore to shareholder wealth, security for creditors, etc. should be made conveniently available to readers of the financial statements in a manner that does not emphasize one aspect rather than others. The often subjective separation of 'extraordinary' items in a way designed to minimize their apparent significance (when they are unfavourable!) was one example among many. Any such possibility of presentational bias increases the risk that the lazy or inexperienced reader will be misled. It also allows the directors deliberately to increase the chances of such a misleading outcome, by pushing favourable aspects of the overall results into the more visible parts of the overall reporting package, and less favourable aspects into those parts likely to be given less attention. It is also important, however, that a statement of comprehensive income does not try to present so much detail on one page that it becomes incomprehensible instead of comprehensive.*

The whole issue of the appropriate format for the presentation of these aspects of financial performance is in a state of flux. In particular, there is questioning of the separation of the two statements, i.e. the statement of income and the statement of the 'other' items. This leads on to the idea of presenting a true statement of comprehensive income that would combine together both the key contents of the income statement and the statement of changes in equity into a single report called a 'statement of comprehensive income' or a 'statement of financial performance'. Such a statement is already allowed in the United States, although the option is little used. This idea is gaining ground internationally and has been proposed by the IASB in an exposure draft expected to be published in 2004.

6.4 Cash flow statements

As already indicated in chapter 2 and in the introduction to this chapter, there is a need not only to focus on earnings as derived under the accruals convention,

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but also on the cash position and cash movements of the reporting enterprise. To demonstrate the point in simple terms, look at Activity 6.C.

Activity 6.C

Consider the following two summarized statements about the same company for the same year, as set out in Tables 6.7 and 6.8.

Table 6.7 Summarized income statement

Sales	250
less cost of sales	(176)
	74
less other expenses	(44)
	30
less depreciation	(8)
	22
less taxation provided	(10)
Profit	12

Table 6.8 Summarized statement of cash flow

Receipts from sales	228
less payments for goods for resale	(162)
	66
less payments for other expenses	(44)
	22
less capital expenditure	(46)
	(24)
less taxation paid	(4)
Net cash outflow	(28)

Has the company had a successful year?

Feedback The first statement, the income statement, shows a successful year and positive results based on the accruals convention. The second statement is a summary of cash flows. This shows a reduction in the cash resources of the business even without the payment of any dividend. In any one year such a reduction may be sensible – even desirable – as part of the process of strategic development and the maximization of long-run returns. But of course in the long run such annual reductions cannot be allowed to continue, and an analyst or potential investor would need to monitor the cash situation and prospects carefully. The general point is that a report on the cash or liquid funds provides useful and important information that is different in focus and information content from the income statement.

The widespread inclusion of cash flow statements in annual financial reporting packages is a relatively recent phenomenon in some countries. There is no mention in the EU Directives of such statements. This formal regulatory position as regards the reporting of cash flows may seem rather surprising, given the demonstrable importance of cash availability and cash flows in the management

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of an enterprise. This is presumably because at the time of the creation of the Directives there was no general practice of any such thing in the major countries involved. The effect was that when national governments came to enact national legislation derived from the Directives, there was usually still no mention of any such statement. One exception was the Spanish law of 1989, which requires of companies a statement showing the movement of funds rather than the movement of cash. The Spanish law has now been overtaken by events.

Nevertheless, the rise of the cash flow statement as a necessary part of a comprehensive reporting package has been rapid. Something like it became a standard requirement in the UK in 1975, in international standards in 1977, and eventually in German law, for listed companies, in 1998. There have been a number of developments in the format – and, indeed, in the underlying principles – of such statements, and there have been two different versions of the International Accounting Standard for this, namely IAS 7.

The practices and regulatory influences involved are sufficiently important and complicated to require a chapter to themselves. We therefore defer a detailed consideration until chapter 13.

6.5 Other general disclosure requirements

This is an introductory textbook, not a manual of practical statement preparation and disclosure requirements. It is important, however, to give a flavour and overview of what you are likely to see in practice. It is also important to have some understanding of the overall picture so as to be able to consider its adequacy. This section looks briefly at IFRS requirements regarding segment reporting, discontinuing operations, earnings per share, and interim financial reports.

6.5.1 Segment reporting

Many large companies are 'conglomerate' enterprises (i.e. they are involved in a number of distinct industries or types of business operation) or multinational corporations operating in several different countries or regions that have different economic and political characteristics. Understanding the past and potential performance of the enterprise as a whole requires an understanding of the separate component parts.

Why it matters

Since the various parts of conglomerate and multinational enterprises are susceptible to different influences, it is quite likely that some components will be doing better than others, and that the risks – and potential – will be significantly different. It follows that it is not possible to appraise the position, progress and prospects of a whole enterprise without some separate information about the major components.

Consider, for example, the situation shown in Table 6.9. Company A and Company B have the same total sales figure of €100 m. However, a fair presentation of the entity as a whole cannot be given without some detailed information about the component parts. For example, a belief that operations in the EU and United States will expand faster than those in Africa would make Company A seem

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Table 6.9 Segment reporting

	Company A (€m)	*Company B (€m)*
Total Sales:	100	100
EU	40	20
USA	40	20
Africa	20	60
Tobacco	10	20
Cotton	70	10
Petrol	10	10
Software	10	60

preferable. However, a belief that software will expand faster than cotton would make Company B seem better.

The analysis outlined above has given rise to what is known as segment (or segmental) reporting. The IASC issued IAS 14, *Segment Reporting*, in its current form in 1997. This standard distinguishes between two reporting formats: business segments and geographical segments. The way in which an enterprise is organized and managed is likely to be based on either its major business segments or on its major geographical segments. The IAS requires enterprises to provide limited segment information about both dimensions, regarded as a primary reporting format and a secondary reporting format. The primary reporting format follows the way in which the business is organized and managed.

IAS 14 requires that a segment of a company's operations should be reported separately if its revenue, results or assets are 10 per cent or more of the total. The reported segments should represent at least 75 per cent of the consolidated amounts. The segment information reported should be prepared following the same accounting policies that have been used in the financial statements.

The principal disclosures for an enterprise's primary segment reporting format for each reportable segment include:

- segment revenue;
- segment result;
- segment assets and segment liabilities;
- a reconciliation between the information disclosed for reportable segments and the aggregate total figures reported in the financial statements.

If the enterprise's primary format is by business segment, then a few disclosures are also required to be analyzed by geographical segment, and vice versa.

6.5.2 Discontinuing operations

Under IASs, a 'discontinuing operation' of an enterprise is a relatively large component that is either being disposed of completely or substantially, or is being abandoned. The effects of such discontinuation are likely to be significant, both

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in their own right and in changing the likely future results of the remaining parts of the enterprise. Fair presentation requires that the discontinuing and continuing operations are distinguished from each other. This will improve the ability of investors, creditors and other users of statements to make projections of the enterprise's cash flows, earnings-generating capacity and financial position.

IAS 35, *Discontinuing Operations*, focuses on how to present a discontinuing operation in an enterprise's financial statements, and what information to disclose. Disclosure is required of the operations being discontinued, the business or geographical segments in which they are reported, the date of the formal establishment of the disclosure procedure, the period over which the discontinuance is likely to be completed, the carrying amount of the assets and liabilities subject to disposal, and information on the profits, losses and cash flows associated with the discontinuing operations. This will help the users of financial statements to predict the future figures after discontinuation.

6.5.3 Earnings per share

Earnings per share, known as EPS, is an important summary indicator of enterprise performance for investors and other users of financial statements. As the name suggests, it relates the total earnings of the enterprise, i.e. the profit attributable to the ordinary (or common) shareholders, to the number of shares issued. It can be used to calculate the Price/Earnings (PE) ratio, which provides a basis of comparison between listed enterprises and an indicator of market confidence. The PE ratio is calculated as market price per share divided by EPS or, more simply, as market price divided by earnings. High expectations of future performance lead to, and are indicated by, a higher share price and therefore a higher PE ratio.

IAS 33, *Earnings per Share*, requires EPS to be presented in two forms, namely 'basic' and 'diluted'. The basic EPS reports the EPS essentially as under current circumstances. The diluted EPS on the other hand calculates the ratio as if the dilutive effect of potential ordinary or common shares currently foreseeable had already taken place; i.e. it shows the position if a possible future increase in the number of shares has already happened. Earnings per share is discussed more fully in chapter 17. If a comprehensive income statement is adopted, the conventional measure of earnings will disappear.

6.5.4 Interim financial reports

Annual financial statements are something of a blunt instrument. They cover a long period, and do not appear until several months after the end of that period. This may fail to meet the criterion of timeliness described in chapter 3. It is helpful to many users of financial statements to receive one or more progress reports at interim points through the year. This is a requirement for most stock exchanges, which are likely to have regulations on such interim statements. It is also, of course, good public relations to maintain an image of openness and transparency with one's lenders, customers and investors. The relevant standard here

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is IAS 34, which does not itself require the publication of interim financial reports but is available for regulators to impose or for companies to choose to follow. As examples, the US Securities and Exchange Commission requires all its registrants to produce quarterly reporting, and the EU is proposing the same.

IAS 34 sets out the minimum content of an interim financial report as including a condensed balance sheet, income statement, cash flow statement and statement of changes in equity, together with selected notes to the statements. The objective is to provide a report that updates the most recent annual financial statements by focusing on those items that are significant to an understanding of the changes in financial position and performance of the enterprise since its last year-end. Policies should be consistent with those used in the annual accounts. Measurements for interim purposes are generally made on a year-to-date basis. Seasonal or cyclical revenues or expenses should not be smoothed or averaged over the various interim periods, but reported as they occur. IAS 34 explicitly states that the interim financial reports should be prepared on the assumption that the reader will have access to the latest annual financial statements.

Activity 6.D

We can now take Activity 6.B further. The next issue to consider is the extent to which the regulatory requirements, whatever they are and wherever they come from, are actually followed. You should attempt to obtain:

- one or more sets of published financial statements prepared under your own national requirements;
- one or more sets of financial statements prepared under IFRSs.

In each case, you should seek to build up a picture of the extent to which the disclosure and revealed measurement practices of those statements fully meet the relevant set of regulations. This will be a gradual process, which you should revisit as your reading and studying proceed; nevertheless, an introductory impression at this time would be interesting and useful.

Feedback Inevitably, this one is largely up to you. But you should not be surprised if you discover examples of circumstances where the practices, whether local or international, do not appear to be fully consistent with the corresponding requirements.

SUMMARY

- This chapter discusses the content and format of published financial statements under IASB requirements. It encourages exploration of local national formats, and comparisons with the international requirements. In Europe, the EU Directives are an important source of regulation.
- The basic contents of financial statements comprise balance sheet, income statement, statement of changes in equity, cash flow statement and relevant notes.
- Balance sheets require analysis by liquidity, usually distinguishing current and non-current (fixed) assets, current and long-term liabilities, and owners' equity. Horizontal and vertical formats are both found in practice.

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- Income statements can be horizontal or vertical in format, and analyzed by function or by nature of expense. Horizontal by function is rare, but the other three possible combinations are used in various countries.
- Notes to the accounts contain a wide variety of supplementary information.
- Various forms of statement of comprehensive income are being considered, partly designed to reduce the significance of the distinction between realized and unrealized revenue and expense components.
- Cash flow statements provide useful information, different from that contained in an income statement. They are discussed further in chapter 13.
- Various other disclosure requirements are common. Four are outlined here, relating to segment reporting, discontinuing operations, earnings per share and interim financial reports.

References and research

The complete financial statements of Nokia, from which we include extracts in this and several later chapters, can be viewed on www.nokia.com, and the contents of this web page are updated annually. Do not look for more than a general impression at this stage.

The IASB documents particularly relevant to this chapter are:

- IAS 1 (revised 2003) *Presentation of Financial Statements*
- IAS 14 (revised 1997) *Segment Reporting*
- IAS 33 (2003) *Earnings per Share*
- IAS 34 (1998) *Interim Financial Reporting*
- IAS 35 (1998) *Discontinuing Operations*

The Fourth Directive is also important in the EU and some other countries.

Discussion continues on possible changes or improvements to many of the disclosure issues covered in this chapter, both at international level and within some national regulatory systems. These debates should be followed, via discussion documents issued by the IASB, by national regulators, and in the professional accounting press.

The following may be of interest from a multi-national perspective:

- R. H. Parker, 'Harmonizing the notes in the UK and France: a case study in *de jure* harmonization', *European Accounting Review*, Vol. 5, No. 2, pp. 317–37, 1996.
- D. Herrmann, 'The Predictive Ability of Geographic Segment Information at the Country, Continent and Consolidated Levels', *Journal of International Financial Management and Accounting*, Spring, 1996.
- J. Prather-Stewart, 'The Information Content of Geographical Segment Disclosures', *Advances in International Accounting*, Vol. 8, 1995.
- A. Lymer, 'The Internet and the Future of Corporate Reporting in Europe', *European Accounting Review*, Vol. 8, No. 2, 1999.

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? Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

6.1 IAS 1 requires the separation of current and non-current (fixed) assets in a balance sheet.

(a) True.
(b) False.

6.2 A current asset must be expected to change its form within 12 months according to IAS 1.

(a) True.
(b) False.

6.3 Using an income statement analyzed by function, cost of sales cannot be determined.

(a) True.
(b) False.

6.4 European Union Directives require the publication of a cash flow statement for listed enterprises.

(a) True.
(b) False.

6.5 IAS 34 requires that listed enterprises produce interim reports at least half-yearly.

(a) True.
(b) False.

6.6 A by-nature income statement shows an increase in inventory as an addition to net turnover, whereas a by-function presentation treats it as an adjustment to expenses. On average, therefore, the by-nature format will lead to higher reported net income.

(a) True.
(b) False.

6.7 IAS 1 requires that the heading of 'property, plant and equipment' must always appear on the face of an enterprise's balance sheet if the figure is material.

(a) True.
(b) False.

6.8 Under the European Union Fourth Directive, which one of the following headings is *not* shown separately when following the vertical profit and loss account in by-nature format?

(a) Net turnover.
(b) Administrative expenses.
(c) Interest payable and similar charges.
(d) Extraordinary income.

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? Exercises

Feedback on the first two of these exercises is given in Appendix E.

6.1 'The disclosure requirements of International Financial Reporting Standards are broadly sufficient to meet the needs of financial statement users.' Discuss.

6.2 Discuss the advantages and disadvantages of horizontal and vertical balance sheet formats.

6.3 Discuss the advantages and disadvantages of each of the four income statement formats allowed by the EU Fourth Directive, namely horizontal and vertical, and by function and by nature.

6.4 Is there a danger of having too much data in published financial statements?

6.5 Which disclosure formats are usually used in your own jurisdiction? Why is this so?

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7

Financial statement analysis

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Objectives After studying this chapter carefully, you should be able to:

- select appropriate information for different users;
- define, select and calculate a variety of common ratios, embracing profits, profitability, liquidity and the management of funds;
- explain the significance of calculated or given ratios;

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- interrelate a variety of ratio figures and build up an overall picture;
- write reports discussing the implications of ratio calculations and original financial data for individual businesses covering one, two or more years, or for two or more businesses.

7.1 Introduction

The final essential element to consider in exploring the context of accounting is the usage and interpretation of financial statements. A vital part of the analysis of financial statements is to be fully aware of their weaknesses. Some of these are inherent in the tools of analysis used, but most of the important ones arise from the content and characteristics of the original data as prepared or published. The conventions and practices of accounting that have been covered in earlier chapters have to be thoroughly understood before effective financial analysis can be achieved. Further, the more deeply the financial reporting issues to be discussed in Part 2 are understood, the more informative the interpretation is likely to be. This chapter provides an introduction to interpretation and its techniques. A deeper exploration is deferred until Part 3.

In chapter 1 we identified the uses of accounting information and their differing needs. The following activity may provide a useful piece of revision.

Activity 7.A Identify the needs/objectives of the external users, referred to in Activity 3.A, in more detail than in the feedback given in that activity.

Feedback

- *Investors/owners* Is the money invested in the business making a suitable return for them or could it earn more if invested elsewhere? Is the business a safe investment; that is, is it likely to become insolvent/bankrupt? Should the investors invest more money in the business?
- *Suppliers* Is the business able to pay for the goods bought on credit? Will the business continue to be a recipient of the goods the supplier produces?
- *Customers* Is the business able to supply the goods that customers require and when they require them? Will the business continue in operation so that guarantees on goods purchased will be met?
- *Lenders* Is there adequate security for any loan made? Does the business make a sufficient profit and have enough cash available to make the necessary payments of interest and capital to the lender?
- *Employees* Does the business make sufficient profit and have enough cash available to make the necessary payments to the employees? Will the business continue in operation at its current level so that an employee has secure employment?
- *Government* What is the starting point for the calculation of taxable income?
- *Public* The majority of the public's needs in respect of employment, pollution, and health and safety are not as yet particularly well provided for in financial statements: can improvements in presentation be made?

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From the feedback to the above activity it is possible to identify three general areas of interest in which users' needs and objectives may lie:

1. *Financial status.* Can the business pay all necessary monies when due? Is it *liquid*?
2. *Performance.* How successful is the business, is it making a reasonable profit? Is it utilizing its assets to the fullest? Is it *profitable* and *efficient*?
3. *Investment.* Is the business a suitable investment for shareholders, or would returns be greater if they were invested elsewhere? Is it a *good* investment?

7.2 Ratios and percentages

A number, in isolation, is not a very helpful piece of information. For example, 'sales last year were 20 million Norwegian krone'; what information does this give? Without knowledge of the exchange rate between the home currency and Norwegian krone, no comparison with home sales is possible. Without knowledge of the size of the Norwegian market for the products concerned, and without knowledge of the structure of that market in terms of size and number of competitors, no comparison with the general situation in Norway is possible. Without knowledge of sales figures for earlier years, and of the assets available and the expenses consumed to create those sales, no appraisal of progress, effectiveness or efficiency is possible.

Comparison is the key. A ratio is potentially a very powerful tool, but it is also a very simple one. A ratio is one number divided by another. If the total Norwegian market for the product is 400 million Norwegian krone, then the ratio of sales by the company mentioned above to its total home market is 20 : 400 (or 1 : 20 or 5 per cent).

In many instances – perhaps only because of habit and experience – a percentage seems most helpful and easy to understand. One simple but effective application of this technique is the idea of *common size statements*. This involves reduction of the monetary figures in financial statements to percentages of relevant totals.

For effective comparison in practice, a number of years' results need to be taken together, and preferably five or more. Note, however, that the more years that are considered, the greater the risk of changes in the accounting policies used over the period. Such changes will distort any trend considerations. They should be looked for and eliminated as far as possible, if necessary on a subjective basis.

A large number of ratios are looked at below. It should be stressed that there are no absolute 'rules' on how to define the ratios. The whole purpose of ratio analysis is to be *useful*, and so an individual analyst should adapt the techniques used to maximize their relevance to a specific situation encountered.

Figures 7.1, 7.2 and 7.3 give the summarized financial statements for a model retail company, Bread Co., for two successive years. These will be used as a basis of calculation and illustration throughout the chapter.

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Figure 7.1 Bread Co. income statements (€000)

	Year ended 31 Dec 20X1		*Year ended 31 Dec 20X2*	
Sales		150		250
Opening inventory	8		12	
Purchases	104		180	
	112		192	
Closing inventory	12		16	
Cost of goods sold		100		176
Gross profit		50		74
Wages and salaries	20		26	
Depreciation	4		8	
Debenture interest	–		2	
Other expenses	14		16	
		38		52
Net profit before tax		12		22
Taxation		4		10
Net profit after tax		8		12

Note: During 20X2, Bread Co. paid out dividends of €6,000, being the dividends paid in relation to the year 20X1. The corresponding dividends paid in 20X3 in relation to 20X2 were also €6,000

Figure 7.2 Bread Co. balance sheets (€000): vertical presentation

	At 31 Dec 20X1		*At 31 Dec 20X2*	
Fixed assets		72		110
Current assets				
Inventory	12		16	
Debtors (receivables)	18		40	
Bank	10		4	
	40		60	
Creditors less than one year				
Trade creditors (payables)	10		28	
Taxation	4		10	
Other creditors	4		6	
	18		44	
Net current assets (working capital)		22		16
Creditors greater than one year				
10 per cent debentures		–		20
Net assets		94		106
Financed by				
Ordinary shares of €1 each		70		76
Retained profits		24		30
Shareholders' funds		94		106

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Figure 7.3 Bread Co. balance sheets (€000): horizontal presentation

		At 31 December 20X1			
Fixed assets		72	Ordinary shares of €1 each		70
			Retained profits		24
Current assets			Shareholders' funds		94
Inventory	12				
Trade debtors (receivables)	18		*Creditors greater than one year*		–
Bank	10				
		40	*Creditors less than one year*		
			Trade creditors (payables)	10	
			Taxation	4	
			Other creditors	4	
					18
		112			112
		At 31 December 20X2			
Fixed assets		110	Ordinary shares of €1 each		76
			Retained profits		30
Current assets					
Inventory	16		*Creditors greater than one year*		
Trade debtors (receivables)	40		10 per cent debentures		20
Bank	4				
		60	*Creditors less than one year*		
			Trade creditors (payables)	28	
			Taxation	10	
			Other creditors	6	
					44
		170			170

7.3 Profit ratios

The income statement will be explored first, beginning with ratios constructed entirely from within the income statement itself.

7.3.1 Gross profit margin

The gross profit is the difference between the sales price and the cost of the goods sold. The gross profit margin is an indication of the extra inflow from an extra unit of sales. The formula is:

$$\text{Gross profit margin} = \frac{\text{gross profit}}{\text{sales}}$$

Activity 7.B Calculate the gross profit margin for Bread Co. for 20X1 and 20X2.

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Feedback The values (from Figure 7.1) are as follows:

$$\text{Gross profit margin for 20X1} = \frac{50}{150} = 33.3 \text{ per cent}$$

$$\text{Gross profit margin for 20X2} = \frac{74}{250} = 29.6 \text{ per cent}$$

An alternative way to consider this aspect is to relate the gross profit to the figure for the cost of goods sold, thus giving the mark-up as a percentage of cost. This might well be the way that the business manager arrived at the selling price in the first place. The figures for mark-up would be as follows:

$$\text{Mark-up for 20X1} = \frac{50}{100} = 50 \text{ per cent}$$

$$\text{Mark-up for 20X2} = \frac{74}{176} = 42 \text{ per cent}$$

For Bread Co. the gross profit margin has fallen since the previous year. Some of the possible reasons for this are obvious. For instance, the selling price may have been deliberately lowered, or the cost of goods sold may have increased but a decision made not to increase selling prices correspondingly. Or the mix of sales may have altered, with an increase in the relative volume of low-margin goods. There might also be other less visible reasons, however. For example, note how the cost of goods sold, and therefore gross profit figures, are directly affected by the inventory figures. The fall in gross profit margin, if unexpected, could suggest an error in the calculation of one of the inventory figures, or that goods were being stolen from the business in 20X2.

The calculations for a manufacturing business would be more complicated because cost of sales means manufacturing cost. This will include a variety of separate items, including direct labour and materials, production overheads and possibly some arbitrary proportion of some of the more general overheads as well. Full information enabling a proper split of the results between gross profit and net profit may be absent, and if it is available it is likely to be based on debatable assumptions covering cost behaviour and cost allocation.

An additional practical problem is that many companies in Europe use the alternative format for the income statement allowed in the Fourth Directive and illustrated in Table 6.5 (by-nature horizontal format). For a manufacturing company, this does not reveal the cost of goods sold and gross profit, but merely adds an increase in inventory to sales and then deducts all expenses including raw materials or finished products obtained from outside. Sometimes reasonable assumptions can be made to produce a useful approximation to gross profit, but sometimes such assumptions will be based on so much guesswork as to be self-defeating.

7.3.2 Net profit margin

The net profit is the difference between the sales and all the expenses. The net profit margin shows the net benefit to the business per unit of sales. The

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formula is:

$$\text{Net profit margin} = \frac{\text{net profit before tax}}{\text{sales}}$$

Activity 7.C Calculate the net profit margin for Bread Co. for 20X1 and 20X2 and comment briefly.

Feedback The figures are calculated thus:

$$\text{Net profit margin for 20X1} = \frac{12}{150} = 8.0 \text{ per cent}$$

$$\text{Net profit margin for 20X2} = \frac{22}{250} = 8.8 \text{ per cent}$$

These values show that the efficiency that Bread Co. demonstrates in turning sales into profit generation has slightly increased in 20X2 compared with 20X1.

The net profit margin will be affected by two major considerations, namely the gross profit margin and the size of the expenses. It may be useful, therefore, to compute an expenses-to-sales ratio as well, as set out below.

7.3.3 Expenses to sales

The expenses-to-sales ratio explains the movement between gross and net profit margins. The formula for this ratio is:

$$\text{Expenses-to-sales ratio} = \frac{\text{expenses}}{\text{sales}}$$

Activity 7.D Calculate the expenses-to-sales ratio for Bread Co. for 20X1 and 20X2 and comment on the picture revealed so far.

Feedback The figures can be calculated thus:

$$\text{Expenses-to-sales in 20X1} = \frac{38}{150} = 25.3 \text{ per cent}$$

$$\text{Expenses-to-sales in 20X2} = \frac{52}{250} = 20.8 \text{ per cent}$$

Bread Co. has successfully managed to increase sales quite substantially in 20X2 without a corresponding pro rata increase in the expenses of running the business.

It is interesting to put together the ratios that have been calculated so far. These are shown in Table 7.1.

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Table 7.1 Bread Co. profit ratios

	20X1	*20X2*
Gross profit margin (%)	33.3	29.6
Expenses-to-sales (%)	25.3	20.8
Net profit margin (%)	8.0	8.8

The reduction in gross profit margin in 20X2 has been more than compensated for by the reduction in the relative size of the expenses, leading to a slight improvement in the net profit margin.

These figures go part way towards the preparation of common-size income statements. A common-size income statement is usually prepared by expressing each item as a percentage of total sales. Furthermore, if this technique is applied to the income statements of two different businesses, two benefits emerge. First, any size differences are taken into account, so that the internal relationships can be compared on equal terms. Second, the internal relationships themselves are clarified and highlighted in a manner convenient to the eye and the mind.

The common-size statements for Bread Co. are shown complete in Figure 7.4, and give more detail of the way in which the success in controlling total expenses has been achieved. In effect, Figure 7.4 calculates each expense item separately as a percentage of sales. A similar technique can be used for balance sheets. Each item will be expressed as a percentage either of total assets or of total fixed assets plus net current assets, depending on the balance sheet structure preferred.

Figure 7.4 Bread Co. common-size income statements (all figures are percentages of sales)

	Year ended 31 Dec 20X1		*Year ended 31 Dec 20X2*	
Sales		100		100
Cost of sales		66.7		70.4
Gross profit		33.3		29.6
Wages and salaries	13.3		10.4	
Depreciation	2.7		3.2	
Debenture interest	–		0.8	
Other expenses	9.3		6.4	
		25.3		20.8
Net profit before tax		8.0		8.8

7.3.4 Net operating profit

It should be noted that ratio preparation is a pragmatic business. It is, of course, possible to calculate a ratio that is 'wrong' in the sense of being defined or calculated in an illogical manner. Even so, once that hurdle has been overcome, it

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is still misleading to think of a limited list of 'right' ratios. For example, in the above discussion the debenture interest has been treated as just another expense. However, depending on the purpose of the analysis, it may be more helpful to view the debenture interest as different and separate from the other expenses, on the grounds that it is concerned with the financing rather than the operation of the business activities. This leads to the idea of calculating the percentage of net operating profit to sales, i.e. taking the profit *before* deduction of the debenture interest. Thus, we have:

$$\text{Net operating profit margin} = \frac{\text{net operating profit}}{\text{sales}} \times 100 \text{ per cent}$$

Activity 7.E Calculate the net operating profit margin for Bread Co. for 20X1 and 20X2 and comment briefly.

Feedback The values can be calculated thus:

$$\text{Net operating profit margin for 20X1} = \frac{12}{150} = 8.0 \text{ per cent}$$

$$\text{Net operating profit margin for 20X2} = \frac{(22 + 2)}{250} = 9.6 \text{ per cent}$$

This shows that, in terms of the costs of operating, as distinct from any costs of financing, the efficiency of Bread Co. clearly increased in 20X2.

Why it matters *From a management perspective, the efficiency of operating (i.e. production and selling) activities is quite distinct from the question of the efficacy of the financing structure. The improvement of each of these two functions is independent of the other. It is likely to be helpful, therefore, to separate out the results for analysis purposes. Note, however, that net profit ratios and net operating profit ratios are not mutually exclusive alternatives. They both provide useful insights into the situation and progress of the business.*

7.4 Profitability ratios

It is not sufficient to analyze the income statement and the profit position in isolation. Business operation requires the use of scarce resources that are not cost-free and that need to be used as efficiently as possible. It is essential to analyze the results of the operations in relation to the resources being used by the business and controlled by the management of the business. This leads to a variety of relationships and ratios that need to be explored. Strictly speaking, when comparing an item from the income statement, which is a total of a year's activity, with an item from the balance sheet, the *average* balance sheet figure for the year is required. In practice, closing balance sheet figures are often taken as a reasonable approximation.

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7.4.1 Asset turnover ratios

One approach to exploring the relationship between returns and resources is to consider some or all of the assets as recorded in the balance sheet. Possibilities include considering total assets, net assets (i.e. assets minus liabilities) or fixed assets alone. These could be related to, for example, sales, gross profit, net profit or net operating profit. Using net profit or net operating profit gives an indication of the rate of return being generated through the use of the assets.

Table 7.2 shows six such ratios calculated for Bread Co. for 20X1 and 20X2. Care has to be taken in applying ratios like these, for there are many influences on the asset figures used that are not related to business efficiency. For example, a business that buys additional inventory without paying for it, just before the balance sheet date, will show an increase in total assets but not an increase in net assets. Therefore the net asset picture better reflects the economic reality. The figures used for fixed assets (which are incorporated into both the other asset figures as well) are notoriously susceptible to changes in depreciation, valuation or asset-replacement policies. Nevertheless, useful indications of trend can often be discovered from ratios like these, provided that the weaknesses and peculiarities behind the figures in each particular business are explored and understood – which, for the casual outsider, may not always be the case.

Table 7.2 Bread Co.: some asset turnover ratios

	20X1	*20X2*
$\frac{\text{sales}}{\text{fixed assets}}$	$\frac{150}{72} = 2.1$	$\frac{250}{110} = 2.3$
$\frac{\text{sales}}{\text{net assets}}$	$\frac{150}{94} = 1.6$	$\frac{250}{106} = 2.4$
$\frac{\text{sales}}{\text{total assets}}$	$\frac{150}{112} = 1.3$	$\frac{250}{170} = 1.5$
$\frac{\text{net profit}}{\text{fixed asssets}}$	$\frac{12}{72} = 0.17$	$\frac{22}{110} = 0.20$
$\frac{\text{net profit}}{\text{net assets}}$	$\frac{12}{94} = 0.13$	$\frac{22}{106} = 0.21$
$\frac{\text{net profit}}{\text{total assets}}$	$\frac{12}{112} = 0.11$	$\frac{22}{170} = 0.13$

Activity 7.F Comment on the implications for the performance of Bread Co. of the information shown in Table 7.2.

Feedback When looking at Table 7.2, it can be suggested that the efficiency of usage of net assets has increased significantly from 20X1 to 20X2, as sales to net assets and net profit to net assets have both risen sharply. The other four ratios presented have increased a little. It should also be noticed, however, that the net assets figure itself has not increased much, whereas fixed assets and total assets have both increased

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very substantially. The net assets, unlike either of the other two asset aggregates, have been held down by a sharp increase in liabilities.

7.4.2 Non-financial resource ratios

It is important to remember that much useful information about business activities is non-financial. This not only applies to information about some of the important outputs, such as chemical or noise pollution, but also to information about some of the inputs. Concentration on non-financial data may be especially useful in relation to a resource input that is particularly scarce or expensive. Sales per employee is a good example of this type of ratio, where sales could be expressed in money terms or in non-financial terms such as the number of units produced each year per employee. Another example is output or sales per square metre of retail space.

Whether non-financial ratios like these are useful will depend on the particular situation and available information. However, they may permit useful comparisons of different organizational structures and different trends of development.

7.4.3 Return on equity (ROE)

A further approach to investigating the relationship between returns generated by a business and the resources employed to create the returns is to consider the sources of finance on the other side of the balance sheet. This is probably the most interesting, because it enables financial statement analysts to focus on various subsets of the total finance being provided, and to consider the return generated *for* that particular subset and its providers. Several different ratios are now considered.

Return on equity relates the return made by the business *for* the shareholders with the finance made available to the business *by* the shareholders. It can be calculated either before tax deductions or after tax deductions, and it may well be useful to do both. If the issue to be explored is the return potentially available for distribution to shareholders, then clearly the after-tax position has to be taken. On the other hand, if an investigation of the efficiency of management in organizing the economic operation of the business is required, or a comparison of ROE with rates of return on other sources of finance, then the deduction of tax figures is a distortion. In such cases, before-tax returns may be more useful.

The formula for return on equity is:

$$\frac{\text{net profit}}{\text{share capital and reserves}}$$

Activity 7.G Calculate the ROE for Bread Co. for 20X1 and 20X2, both before and after tax.

Feedback

$$\text{ROE before tax for 20X1} = \frac{12}{94} = 12.8 \text{ per cent}$$

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$$\text{ROE before tax for 20X2} = \frac{22}{106} = 20.8 \text{ per cent}$$

$$\text{ROE after tax for 20X1} = \frac{8}{94} = 8.5 \text{ per cent}$$

$$\text{ROE after tax for 20X2} = \frac{12}{106} = 11.3 \text{ per cent}$$

The increase in ROE before tax is large, but the after-tax return is partly reduced by a larger-than-proportional tax charge.

7.4.4 Return on capital employed (ROCE)

In terms of assessing the efficient usage of the resources provided to the business, the ROCE is probably the most important single ratio of all. The capital employed is normally defined as the owners' equity plus the long-term borrowings of the business. It seeks to embrace all the long-term finance made available to the business. The ratio therefore investigates the efficiency of the business as a whole, rather than from the point of view of any particular subset of users, such as the owners.

Notice that the ROE compares the return made on the share capital and reserves with the amount of that share capital and reserves. In the case of the ROCE, the target is to compare:

(a) the return made on the total of the share capital, the reserves and the long-term borrowings with
(b) the amount of that total.

In contrast to the ROE, the denominator of the ROCE ratio is larger by the amount of a company's long-term borrowings. It therefore follows that the numerator of the ROCE will be larger than the numerator of the ROE by the amount of the return that relates to those borrowings, i.e. interest. This interest, being an expense of the business, has been deducted in arriving at net profit. So, in order to arrive at the correct 'return' figure relevant to the ROCE calculation, the interest on the long-term borrowings must be added back to the net profit figure.

The formula for return on capital employed is:

$$\frac{\text{net profit before interest on long-term borrowings}}{\text{owners' equity plus long-term borrowings}}$$

Profit before tax is used because interest figures are given gross of any tax effect, and to take after-tax profit and then adjust for interest net of tax would require subjective adjustments to the tax charge. This figure is sometimes referred to as EBIT, which stands for earnings before interest and tax.

Activity 7.H Calculate ROCE for Bread Co. for 20X1 and 20X2, compare the results with the ROE before-tax figures, and comment.

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Feedback The ROCE figures are as follows:

$$\text{ROCE for 20X1} = \frac{12}{94} = 12.8 \text{ per cent}$$

$$\text{ROCE for 20X2} = \frac{22 + 2}{106 + 20} = \frac{24}{126} = 19.0 \text{ per cent}$$

In summary, we have (see Activity 7.G above) the required figures as set out in Table 7.3.

Table 7.3 ROE/ROCE comparison for Bread Co.

	20X1	*20X2*
ROE (before tax)	12.8%	20.8%
ROCE	12.8%	19.0%

In 20X1 the figures are of course identical, because there were no long-term borrowings. In 20X2 the return made by the business as a whole, considering all the long-term finance, was 19.0 per cent; yet the return to the shareholders, at 20.8 per cent, was more than this. The shareholders have arranged a company structure where they get more than their simple proportion of the ROCE increase. The reason for this should be clear: the providers of the remainder of the capital employed have accepted a fixed return, which is *less* than their simple proportion of the ROCE would be at present levels of profit: ROCE is 19.0 per cent, interest on debentures is 10.0 per cent. Therefore for that part of capital employed represented by the debentures, the difference of 19.0 per cent – 10.0 per cent = 9.0 per cent, is available for the owners, in addition to the 19.0 per cent that has been earned for them on their own proportion of the capital employed.

7.4.5 Gearing and its implications

The relationship between equity and long-term borrowings is known as gearing or leverage of the financial structure. There are two common ways of calculating a gearing ratio:

(a) compare the debt (i.e. long-term borrowings) with the equity; or
(b) compare the debt with the capital employed (i.e. equity plus debt).

Formulae for the two gearing ratios are:

$$\text{(a) Gearing} = \frac{\text{debt}}{\text{share capital plus reserves}} = \frac{\text{debt}}{\text{equity}}$$

or

$$\text{(b) Gearing} = \frac{\text{debt}}{\text{share capital plus reserves plus debt}} = \frac{\text{debt}}{\text{capital employed}}$$

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For Bread Co. the figures are:

(a) 20X1: 0.0 per cent

20X2: $\frac{20}{106}$ = 18.9 per cent

(b) 20X1: 0.0 per cent

20X2: $\frac{20}{126}$ = 15.9 per cent

With the figures that are emerging here, it seems to be in the interests of the shareholders to maximize the proportion of the total capital employed that is financed by debt rather than by themselves. The key ratio is the ROCE, which for Bread Co. for 20X2 is, as seen before, 19 per cent. In the situation given in Figures 7.2 and 7.3, with non-current debt of 20 (measured in €000), the ROE was 20.8 per cent.

If we were to increase the gearing ratio so that, for example, the same capital employed of 126 consisted instead of capital plus reserves of 66 and debentures (with 10 per cent interest) of 60, then the ratios for 20X2 would give a much improved return to the equity investors, as follows:

$$\text{ROE for 20X2} = \left(\frac{24-6}{126-60}\right) = \frac{18}{66} = 27.3 \text{ per cent}$$

$$\text{ROCE for 20X2} = \frac{24}{126} = 19.0 \text{ per cent}$$

There are limits to the feasibility of increasing the proportion of debt, however. It is more risky to lend to a business that already has significant debt, and therefore increased interest rates would be needed to attract such lending – if, indeed, it could be attracted at all. Consider what happens to a highly geared structure when operating profits fall. Suppose that Bread Co. alters its capital structure (as above) to give owners' equity of 66 and 10 per cent debentures of 60, but then in 20X3 the level of operating profit falls back to that of 20X1, i.e. 12. This would lead to 20X3 ratios as follows:

$$\text{ROE for 20X3} = \left(\frac{12-6}{66}\right) = 9.1 \text{ per cent}$$

$$\text{ROCE for 20X3} = \frac{12}{126} = 9.5 \text{ per cent}$$

Now the gearing is working in the other direction, to magnify the fall suffered by the shareholders rather than to magnify the rise. The end result is that ROE is less than ROCE. Furthermore, with an operating profit of 12, the more the gearing ratio is increased the greater the extent to which ROE is lower than ROCE. It is, of course, perfectly possible for ROCE to be positive and ROE to be negative at the same time. It should be remembered also that a company that cannot afford to pay dividends does not *have* to pay them. However, a company that cannot afford to pay interest still legally has to pay it. This can be the road to bankruptcy.

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7.4.6 Further analysis of ROE and ROCE

Bread Co. is a greatly simplified situation and, in practice, life is much more complicated. The text and case studies of this book are not designed to cover all possible complications that might be met, but to enable the diligent reader to work out how to deal with them. To begin this process, two complications are mentioned at this stage.

What is long-term borrowing?

If a liability is defined as 'falling due within one year' or some similar phrase, the reality behind the picture may not be clear-cut. For example, consider the amounts set out in Table 7.4 as falling due within one year.

Table 7.4 Sample liabilities

	20X4	*20X5*
Bank loans	18	19
Bank overdrafts	5	4
Bills payable	20	10
Trade payables	50	55
Taxation	32	34
Dividends	20	25
Other payables and accruals	18	20
	163	167

Does it look as though all of these items are genuine short-term liabilities arising from the trading and operating cycle? Or do some of them seem likely to be a continuing source of finance that happens to be legally constructed so as to be finite (but renewable) within one year? These are subjective questions, but it seems likely that the bank loans and overdrafts, and possibly also the commercial bills payable, are being used to finance the activities of the business, rather than being an integral part of those activities.

If that view is taken, then these items might be included as long-term borrowing for the purposes of calculating capital employed. Further, the interest on those 'current' liabilities must then also be added back to net profit (or not deducted from operating profit) in arriving at the correct return figure for the ROCE ratio. This may involve a very careful analysis and division of the interest-payable amount between the various loans to which it relates.

Different classes of owners

The above discussions also assume that all shareholders are equal and identical. However, there may be several classes, and each class will then have its own viewpoint on the performance of the business. For example, suppose now that the share capital of Bread Co. (see Figures 7.2 and 7.3) had included 10,000 1 euro preference shares, each bearing a fixed 10 per cent dividend entitlement, the ordinary share capital then being 60,000 and 66,000 at 31 December 20X1 and 31 December 20X2 respectively. The ROE (and ROCE) will be the same as

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previously shown. ROE, taking before-tax figures to ease comparison, was:

$$20X1: \frac{12}{94} = 12.8 \text{ per cent}$$

$$20X2: \frac{22}{106} = 20.8 \text{ per cent}$$

However, it is also possible to calculate the return on ordinary owners' equity (ROOE). For this, the preference share capital must be deducted from the denominator, and the preference shareholders' dividend return must be deducted from the numerator. So, we have:

$$\text{ROOE in 20X1} = \left(\frac{12-1}{94-10}\right) = \frac{11}{84} = 13.1 \text{ per cent}$$

$$\text{ROOE in 20X2} = \left(\frac{22-1}{106-10}\right) = \frac{21}{96} = 21.9 \text{ per cent}$$

This leads to a complete set of data as shown in Table 7.5.

Table 7.5 Returns ratios for Bread Co.

	20X1	*20X2*
ROCE (all capital employed)	12.8%	19.0%
ROE (all shareholders' equity)	12.8%	20.8%
ROOE (all ordinary owners' equity)	13.1%	21.9%

The effect on the ordinary shareholders of adding a tranche of preference shareholders, with a lower dividend, is similar to the effect on all shareholders together of adding a tranche of debentures with a lower interest rate.

Why it matters *It is easy to be blinded by statistics. Consider the ROE of 20.8 per cent calculated above. First of all, this is a numerically correct and logically valid figure. It reveals what the business has achieved after 'paying off' everyone involved except the owners (and except the tax authorities, since we have taken before-tax figures here). But it does not reveal the potential return to a potential shareholder. A potential shareholder could only buy an ordinary share, with 21.9 per cent generated for it in 20X2, or a preference share, with a dividend of 10 per cent generated for it. From this point of view, therefore, ROE is not revealing relevant information, whereas ROOE would be. Furthermore, this figure of 21.9 per cent is not, of course, the rate of return that a new shareholder would receive if buying a share today on the stock market. That rate of return would be dependent on the price actually paid for the share.*

7.5 Liquidity ratios

This section explores some ratios related to the liquidity (i.e. cash or near-cash position) and fund management of a business. A number of ratios can be calculated

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that compare short-term assets with current liabilities. Each ratio uses a different interpretation of just how short-term the assets or liabilities should be. The shorter the term considered, the more prudent, pessimistic or safe is the approach adopted. Each ratio in this section shows the extent to which the particular definition of 'short-term assets' chosen would allow (if the assets concerned turn into cash at their balance sheet value) the repayment of the current liabilities in existence at that date.

Three common ratios are:

1. $\text{Cash ratio} = \dfrac{\text{cash plus marketable securities}}{\text{current liabilities}}$

2. $\text{Acid test (or quick assets) ratio} = \dfrac{\text{current assets less inventory}}{\text{current liabilities}}$

3. $\text{Current (or working capital) ratio} = \dfrac{\text{current assets}}{\text{current liabilities}}$

Activity 7.I Calculate the above three ratios for Bread Co. for 20X1 and 20X2, using the data in Figures 7.2 and 7.3.

Feedback

1. $\text{Cash ratio for 20X1} = \dfrac{10}{18} = 0.55 : 1$

   $\text{Cash ratio for 20X2} = \dfrac{4}{44} = 0.09 : 1$

2. $\text{Acid-test ratio for 20X1} = \dfrac{28}{18} = 1.6 : 1$

   $\text{Acid-test ratio for 20X2} = \dfrac{44}{44} = 1.0 : 1$

3. $\text{Current ratio for 20X1} = \dfrac{40}{18} = 2.2 : 1$

   $\text{Current ratio for 20X2} = \dfrac{60}{44} = 1.4 : 1$

It is important to remember that these ratios take a static view. They assume that the relevant assets are all that will be available to settle the current liabilities, and that the assets will provide the cash amounts as recorded in the balance sheet (even though inventory is normally recorded at cost, i.e. below selling price). So, for example, the quick assets ratio assumes that all the debtors stated will pay, but excludes any cash sales from inventory.

The safety or acceptability of any particular ratio for any particular business is related to the everyday operations of the business. Each industry will have a typical operational and financial structure, and calculated ratios should be compared with competitor or general industry figures, or with past trends, to enable meaningful comparisons to be drawn.

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7.6 Interest cover

Long-term liquidity is connected to gearing, as examined in section 7.4. The balance sheet perspective discussed there can be supplemented by considering the *interest cover*. This is the number of times a business could pay its necessary interest charges out of the available operating profits of the current year. The formula for interest cover is:

$$\frac{\text{net profit before interest and tax}}{\text{interest charges}}$$

For Bread Co. the figures will be as follows:

$$\text{Interest cover in 20X1} = \frac{12}{0} \text{ (i.e. infinite value)}$$

$$\text{Interest cover in 20X2} = \left(\frac{22+2}{2}\right) = 12 \text{ times}$$

This figure is an indication of the level of risk, in the particular year, that Bread Co. might not be able to pay interest on its borrowings out of current operating income. The higher the interest cover, the greater the fall in profits that would have to occur before net profit (i.e. after charging interest) became negative. Note that for this ratio, *all* interest payable should be included, irrespective of whether it relates to long- or short-term borrowing.

7.7 Funds management ratios

Considerable insight into the cash and liquidity implications of the day-to-day operations of a business can be gained by examining some of the constituent elements of working capital, i.e. inventory, debtors and creditors. In each case the amount of the item is compared with the flow related to it. These ratios can be expressed in a number of ways, but probably the most easily understandable is to express the answer in days.

7.7.1 Debtors' collection

This ratio compares trade debtors (receivables) with sales. To calculate the average debtor collection period in days, the formula is:

$$\frac{\text{trade debtors}}{\text{sales}} \times 365$$

Arguably, cash sales should be excluded from the denominator, but the information is unlikely to be available to an outside analyst. If necessary, because of lack of information, total debtors will have to be used instead of trade debtors. Frequently, the amount is taken from the closing balance sheet, but a more theoretically valid ratio is obtained by using the average amount of each item in existence over the trading cycle. A simple average of opening and closing balance

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sheet figures may well be a better approximation to the true average than taking just the closing balance sheet figure.

7.7.2 Creditors' payment

A similar ratio can be calculated for creditors (payables). To calculate the average creditor payment period, it is theoretically necessary to relate trade creditors with annual purchases. Frequently, the purchases figure is not available and then the cost of goods sold will have to be used as a surrogate. In some income statement formats, cost of sales is not shown either, and so the sales figure has to be used. Where cost of sales is available but the cost of purchases is not, the formula becomes:

$$\frac{\text{trade creditors}}{\text{cost of sales}} \times 365$$

7.7.3 Inventory turnover

The inventory turnover ratio indicates the time that inventory remains in the business between purchase and sale, on the average. Since inventory is valued at cost, it should be compared with cost of goods sold (which is obviously at cost) rather than with sales (which are at selling price). Again, this assumes that the data are available. The formula for the ratio is:

$$\frac{\text{inventory}}{\text{cost of goods sold}} \times 365$$

Activity 7.J Calculate debtors', creditors' and inventory ratios (in terms of days) for Bread Co. for 20X1 and 20X2.

Feedback The figures can be summarized in tabular form, as shown in Table 7.6.

Table 7.6 Inventory ratios for Bread Co.

Ratio	*20X1*	*20X2*
Debtors' collection	$\frac{18}{150} \times 365$	$\frac{40}{250} \times 365$
	= 44 days	= 58 days
Creditors' payment	$\frac{10}{100} \times 365$	$\frac{28}{176} \times 365$
	= 36.5 days	= 58 days
Inventory turnover	$\left(\frac{\frac{8+12}{2}}{100}\right) \times 365$	$\left(\frac{\frac{12+16}{2}}{176}\right) \times 365$
	= 36.5 days	= 29 days

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Trends can be explored between 20X1 and 20X2 showing, for example, that customers seem to be taking longer to pay in 20X2. The ratios can also be related together. In 20X1, if purchases were made on day 1 then they were paid for (on average, of course) some 36 days later. Those purchases remained in store (or process) also for some 36 days, were then sold, and the sales were actually paid for some 44 days after the sale. The outward cash flow therefore occurs on day 36, but the inward cash flow not until day 80.

7.8 Introduction to investment ratios

The profitability and finance ratios so far discussed investigate various relationships within financial statements. Investment ratios consider items inside and outside financial statements from the equity investor's perspective. The connection between an investor and a company is obviously through the medium of a share, and most investment ratios relate shares to some aspect of the financial statements. We give a brief introduction to investment ratios here. When Part 2 has been studied, your understanding of much of this data should have been considerably deepened, and more complexities can then be explored in Part 3.

7.8.1 Book value per share

The *book value* of an ordinary share is the value that would be attributable to each ordinary share if the assets and liabilities of the company were sold or settled at the figures shown in the published balance sheet (i.e. at the 'value in the books'). The book value of an ordinary share is therefore the net assets divided by the number of issued ordinary shares. For Bread Co. (see Figures 7.2 and 7.3) the figures are $\frac{94}{70}$ = €1.34 for 20X1 and $\frac{106}{76}$ = €1.39 for 20X2.

Since most figures in the balance sheet are not designed to show the value of the item in any market-orientated sense of value, this ratio – at least in isolation – is not particularly useful.

7.8.2 Market value per share

For a publicly quoted company the market value per share, i.e. the share price, is easily obtainable from reports of stock exchange transactions, e.g. from newspapers. For a private company, it is probably impossible to obtain this value except by guesswork, because there is no regular market in such a company's shares. If there is no market, there can be no market price.

7.8.3 Earnings per share

Earnings per share (EPS) is an important statistic that gives an idea of what the business has actually achieved during the year for the benefit of the shareholders, divided by the number of shares. If you buy one of these shares, what has been generated in the year that can be attributable to you? In a simple situation, the

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calculation of EPS is:

$$\frac{\text{earnings attributable to ordinary shareholders}}{\text{number of ordinary shares}}$$

Activity 7.K Calculate EPS for Bread Co. for 20X1 and 20X2.

Feedback The figures are as follows.

20X1 earnings attributable to shareholders = €8,000
number of shares (of €1 each) = 70,000

Therefore EPS = $\frac{8}{70}$ = €0.11.

20X2 earnings attributable to shareholders = €12,000
number of shares (of €1 each) = 76,000

Therefore EPS = $\frac{12}{76}$ = €0.16.

This rise in EPS obviously suggests an improved performance by Bread Co. from 20X1 to 20X2 when considered from the viewpoint of a shareholder.

7.9 Some general issues

7.9.1 Industry-specific considerations

We have already made the point that it is vital to consider any particular set of financial statements in the context of what is normal or typical in the field of operations involved. The same figure for any chosen ratio may suggest danger in the context of one industry, but a high degree of safety or success in another. For a simple illustration of this point, try the following activity.

Activity 7.L A sample of ratios for the same year for three firms, A, B and C is given in Table 7.7. The firms are in three different industries: one is a supermarket, one is in heavy engineering and one is a firm of accountants and auditors. Which do you think is which?

Table 7.7 Ratios for A, B and C

	A	*B*	*C*
Debtors' collection (days)	3	35	55
Inventory turnover (days)	27	5	80
Acid test ratio	0.1 : 1	0.3 : 1	1.1 : 1
Current ratio	1.0 : 1	0.4 : 1	2.3 : 1

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Feedback One can reasonably guess that A is the supermarket (fast debtors turnover (relatively low debtors), significant inventory but not slow-moving), B is the accountants (rapid inventory turnover consistent with a very low inventory), and C is in heavy engineering (slow-moving and apparently large inventory/work in progress).

7.9.2 Relationships between ratios

The relationship between the ratios can be charted. To take the example of return on capital employed, Figure 7.5 shows how it can be split up into components. The result is a 'pyramid of ratios'. The pyramid can be extended to a further level by comparing the individual expenses to sales and by breaking down the fixed assets and net current assets into their constituent parts, as in Figure 7.6.

Figure 7.5 Pyramid of ratios (levels 1–3)

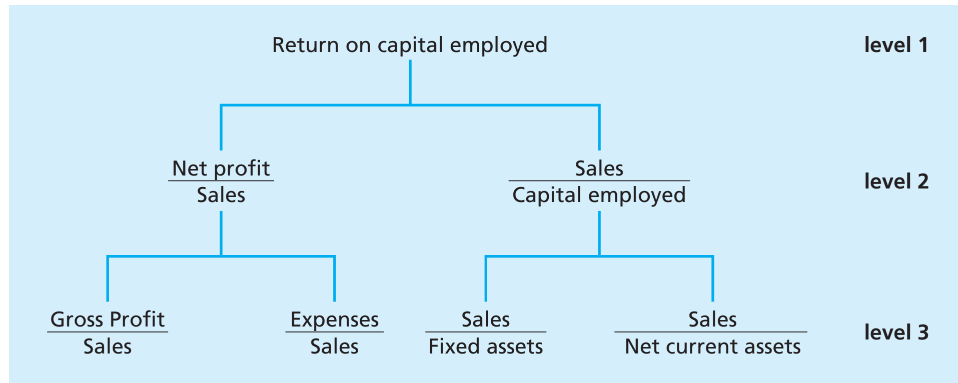
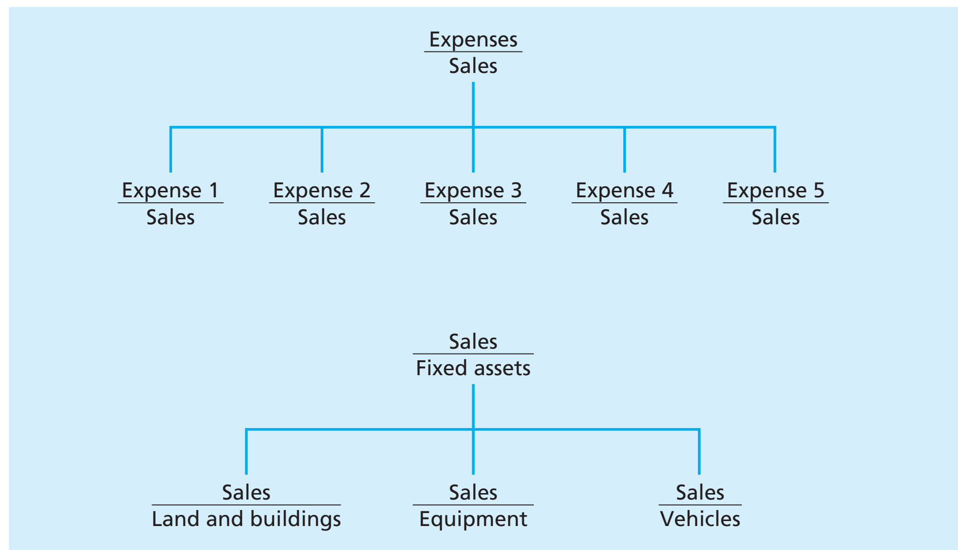


Figure 7.6 Pyramid of ratios (level 4)



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7.9.3 Caveat

There is a good deal more involved with interpretation than has been discussed in this chapter. We return to consider the whole area further in Part 3. Part 2 provides more detailed understanding of many of the accounting problems that affect the numbers used in financial statements. Such greater understanding should inform and affect the interpretation of the financial statements themselves.

Finally, it is important to remember that ratios are usually most informative when comparison is involved. A reasonable ratio in one industry, country or circumstance may be very different from what would be regarded as acceptable in other circumstances.

SUMMARY

- Ratios are techniques for expressing the earnings structure, profitability, liquidity and potential of business organizations.
- Ratios are also methods of analyzing relationships within the income statement and the interconnection between the income statement and the balance sheet.
- Gearing is an important consideration that can significantly affect the return attributable to investors, as compared with the return generated by the business as a whole.
- Liquidity and funds management can also be assessed by various ratios.
- The interrelationship between various ratios is important, and an overall picture can be built up by considering such interconnections. No ratio is 'better' than the underlying data, but sometimes 'errors' can cancel out when considering trends rather than absolute numbers.
- The interrelationships between some of the important ratios can become clear if they are considered as components of more summarized ratios, forming what is often known as a pyramid of ratios.

? Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

7.1 Which of the following would be most likely to be classified as a current liability?

(a) Mortgage payable.
(b) Deferred tax.
(c) Taxes payable.
(d) Five-year bills payable.

7.2 Which of the following is a measure of liquidity?

(a) Working capital.
(b) Profit margin.
(c) Return on assets.
(d) Return on equity.

7.3 Current assets divided by current liabilities is known as:

(a) Working capital.
(b) Current ratio.

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(c) Profit margin.
(d) Capital structure.

7.4 One measure of capital structure or gearing is:

(a) Current assets minus current liabilities.
(b) Current assets divided by current liabilities.
(c) Net income divided by total assets.
(d) Total liabilities divided by total owners' equity.

7.5 The net assets of a company equal:

(a) Current assets minus current liabilities.
(b) Total assets minus current liabilities.
(c) Shareholders' funds minus liabilities.
(d) Shareholders' funds.

7.6 High gearing is:

(a) Always good.
(b) Always bad.
(c) Can be either good or bad.

Data for questions 7.7–7.11

The trading account of B Co. for the year ended 30 June 20X3 is set out in Figure 7.7. The amounts shown in Table 7.8 have been extracted from the company's balance sheet at 30 June 20X3.

Figure 7.7 Trading account of B Co. for year to 30 June 20X3

	€	€
Sales		860,000
Opening inventory	100,000	
Purchases	625,000	
	725,000	
Closing inventory	76,000	
Cost of goods sold		649,000
		211,000

Table 7.8 Balance sheet items for B Co. at 30 June 20X3

	€
Trade debtors	120,000
Prepayments	8,000
Cash in hand	12,000
Bank overdraft	16,000
Trade creditors	80,000
Accruals	6,000
Declared dividends	10,000

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In the questions that follow, you should assume a year of 365 days.

7.7 The average inventory turnover period in days is:

(a) 33 days.
(b) 37 days.
(c) 49 days
(d) 51 days.

7.8 The debtors collection period in days is:

(a) 51 days.
(b) 54 days.
(c) 67 days.
(d) 72 days.

7.9 The creditors payment period in days is:

(a) 45 days.
(b) 47 days.
(c) 50 days.
(d) 78 days.

7.10 The current ratio at 30 June 20X3 is:

(a) 1.25 : 1.
(b) 1.93 : 1.
(c) 2.04 : 1.
(d) 2.12 : 1.

7.11 The quick ratio (or acid test ratio) at 30 June 20X3 is:

(a) 1.25 : 1.
(b) 1.28 : 1.
(c) 1.37 : 1.
(d) 1.50 : 1.

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Exercises

Feedback on the first two of these exercises is given in Appendix E.

7.1 The simplified financial statements of two companies, P and Q, are shown below at Figure 7.8.

Figure 7.8 Financial statements for P and Q

	P	Q
Income statement for 20X2		
Sales	45,000	40,909
less Cost of goods sold	(36,000)	(32,727)
Gross profit	9,000	8,182
less Depreciation	(3,500)	(2,917)
Other expenses	(1,500)	(1,364)
Net profit	4,000	3,901
Balance sheet as at 31 December 20X2		
Equipment at cost	35,000	29,167
less Depreciation	(3,500)	(2,917)
	31,500	26,250
Inventory at cost	10,500	10,000
Net monetary current assets	2,000	2,000
less Long-term loan	(10,000)	(10,000)
	34,000	28,250
Share capital	25,000	25,000
Retained profits	4,000	3,901
Other reserves	5,000	(651)
	34,000	28,250

Assuming that interest is charged on the long-term loan at 10 per cent per annum, calculate the following ratios for 20X2 and comment on the results:

$\frac{\text{gross profit}}{\text{turnover}}$; $\frac{\text{net operating profit}}{\text{turnover}}$; $\frac{\text{net profit}}{\text{owner's equity}}$; ROCE; gearing.

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7.2 The summarized balance sheets of company R at the end of two consecutive financial years were as shown below, in Figure 7.9.

Figure 7.9 R's summarized balance sheets as at 31 March (€000)

20X1			*20X2*	
		Fixed assets (at written-down values)		
50		Premises	48	
115		Plant and equipment	196	
42		Vehicles	81	
	207			325
		Current assets		
86		Inventory	177	
49		Debtors and prepayments	62	
53		Bank and cash	30	
188			269	
		Current liabilities		
72		Creditors and accruals	132	
20		Proposed dividends	30	
92			162	
	96	*Working capital*		107
	303	*Net assets*		432
		Financed by		
250		Ordinary share capital	250	
53		Reserves	82	
	303	Shareholders' funds		332
	–	Loan capital: 7 per cent debentures		100
	303			432

Sales were €541,000 and €675,000 for the years ended 31 March 20X1 and 20X2, respectively. Corresponding figures for cost of sales were €369,000 and €481,000, respectively. At 31 March 20X0, reserves had totalled €21,000. Ordinary share capital was the same throughout.

Calculate the following ratios for both years and comment briefly on the results:

(i) Gross profit/Sales;
(ii) Net profit/Sales;
(iii) Sales/Net assets;
(iv) Net profit/Net assets;
(v) Current assets/Current liabilities;
(vi) Quick assets/Current liabilities.

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7.3 Mosca and Vespa are two sole traders with the financial statements (in euros) for the year ending 31 December as set out in Figure 7.10.

Figure 7.10 Financial statements for Mosca and Vespa

	Mosca		*Vespa*	
Income Statement				
Sales		144,000		140,000
Cost of goods sold		120,000		120,000
		24,000		20,000
Selling expenses	7,000		10,000	
Administration expenses	3,000		6,000	
		10,000		16,000
Net profit		14,000		4,000
Balance Sheet				
Fixed assets		54,000		30,000
Current assets				
Inventory	20,000		10,000	
Debtors	30,000		50,000	
Cash	10,000		5,000	
		60,000		65,000
less Creditors		24,000		5,000
		90,000		90,000
Capital		90,000		90,000

Using the information contained in the financial statements, and assuming opening and closing inventories are the same, calculate the following ratios and comment on the results of your analysis:

(i) return on capital employed;
(ii) gross profit margin;
(iii) current ratio;
(iv) inventory turnover period;
(v) debtors collection period;
(vi) creditors payment period.

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7.4 The following information has been extracted from the recently published accounts of company D, as set out in Figure 7.11.

Figure 7.11 Financial statements for company D as at 30 April

Balance sheets as at 30 April

		20X3		*20X2*
Fixed assets		1,850		1,430
Current assets				
Inventory	640		490	
Debtors	1,230		1,080	
Cash	80		120	
	1,950		1,690	
Creditors due in less than 1 year				
Bank overdraft	110		80	
Creditors	750		690	
Taxation	30		20	
Dividends	65		55	
	955		845	
Net current assets		995		845
Total assets less current liabilities		2,845		2,275
less Creditors due in more than 1 year				
10 per cent debentures		800		600
		2,045		1,675
Share capital and reserves				
Ordinary share capital		800		800
Reserves		1,245		875
		2,045		1,675

Extracts from the income statements

	20X3	20X2
Sales	11,200	9,750
Cost of goods sold	8,460	6,825
Net profit before tax	465	320
This is after charging:		
Depreciation	80	60
Interest on bank overdraft	15	9
Audit fees	12	10

The ratios set out in Table 7.9 (overleaf) are those calculated for D, based on its published accounts for the previous year, and also the latest industry average ratios.

Required:

(a) Calculate comparable ratios (to two decimal places where appropriate) for company D for the year ended 30 April 20X3. All calculations must be clearly shown.

(b) Analyze the performance of D, comparing the results against the previous year and against the industry average as supplied.

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Table 7.9 Financial ratios for company D

	D as at 30 April 20X2	*Industry average*
ROCE		
(capital employed = equity and debentures)	16.70 per cent	18.50 per cent
Profit/sales	3.90 per cent	4.73 per cent
Asset turnover	4.29	3.91
Current ratio	2.00	1.90
Quick ratio	1.42	1.27
Gross profit margin	30.00 per cent	35.23 per cent
Days debtors	40 days	52 days
Days creditors	37 days	49 days
Inventory turnover	13.90	18.30
Gearing	26.37 per cent	32.71 per cent

7.5 Business A and Business B are both engaged in retailing but seem to take a different approach to this trade according to the information available. The information consists of a table of ratios, shown as Table 7.10.

Table 7.10 Financial ratios for companies A and B

Ratio	*Business A*	*Business B*
Current ratio	2 : 1	1.5 : 1
Quick assets (acid test) ratio	1.7 : 1	0.7 : 1
Return on capital employed (ROCE)	20 per cent	17 per cent
Return on owner's equity (ROE)	30 per cent	18 per cent
Debtors collection	63 days	21 days
Creditors payment	50 days	45 days
Gross profit percentage	40 per cent	15 per cent
Net profit percentage	10 per cent	10 per cent
Inventory turnover	52 days	25 days

Required:

(a) Explain briefly how each ratio is calculated.

(b) Describe what this information indicates about the differences in approach between the two businesses. If one of them prides itself on personal service and one of them on competitive prices, which do you think is which, and why?

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7.6 You are given in Figure 7.12, in summarized form, the financial statements of Non Co. for the years 20X2 and 20X3.

Figure 7.12 Financial statements for Non Co. For 20X2 and 20X3

		20X3 Balance sheet (€000)		*20X2 Balance sheet* (€000)
Machinery – cost	11		10	
– depreciation	5		4	
		6		6
Building – cost	90		50	
– depreciation	11		10	
		79		40
Investment at cost		80		50
Land		63		43
Inventory		65		55
Receivables		50		40
Bank		–		3
		343		237
Ordinary shares of €1 each		50		40
Share premium		14		12
Revaluation reserve		20		–
Retained earnings		25		25
Debenture loan, 10% p.a.		150		100
Trade payables		60		40
Other creditors and accruals		20		20
Bank		4		–
		343		237

	20X3 Income statement	20X2 Income statement
Sales	200	200
Cost of goods sold	120	100
Gross profit	80	100
Expenses	60	60
Earnings	20	40

Six months after each of the two year-ends, a dividend of €20,000 is paid in relation to the results of that year.

Prepare a table of ratios calculated for both years, showing your calculations, and comment on the position, progress and direction of Non Co. as far as the available evidence permits.

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Part 2

FINANCIAL REPORTING ISSUES

8 Recognition and measurement of the elements of financial statements

9 Tangible and intangible fixed assets

10 Inventories

11 Financial assets, liabilities and equity

12 Accounting and taxation

13 Cash flow statements

14 Group accounting

15 Foreign currency translation

16 Accounting for price changes

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8

Recognition and measurement of the elements of financial statements

CONTENTS

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OBJECTIVES

After studying the chapter carefully, you should be able to:

- explain the effects of the primacy of the definition of 'asset' for the division of payments into assets and expenses;
- show the implications of the definition of 'liability' for recognition of liabilities;
- illustrate when an asset should be recognized in a balance sheet;
- explain the main issues concerning the initial and subsequent measurement of assets and liabilities;
- outline the main possible alternatives to historical cost measurement;
- outline the main principles for recognition of income.

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8.1 Introduction

Part 2 of this book deals with recognition, measurement and presentation of the elements of financial statements: assets, liabilities, equity, revenues, expenses and cash flows. As in the rest of this book, the general context of the discussion is the standards of the IASB, with some reference to the regulations of particular countries and the practices of particular companies.

This chapter deals with some basic recognition and measurement issues. To take assets as the preliminary example, there are two basic issues:

- As pointed out in section 2.4 of this book, it is helpful to establish a primacy of definitions based on either:
  - assets and liabilities; or
  - expenses and income.
- Then, there is a hierarchy of decisions:
  - Is the item an asset?
  - If yes, should the asset be recognized in the balance sheet?
  - If again yes, how should it be measured?

These matters are introduced in this chapter and taken further for various types of assets and liabilities in chapters 9–12. Income recognition is also outlined at the end of this chapter. The presentation of cash flow statements is examined in chapter 13.

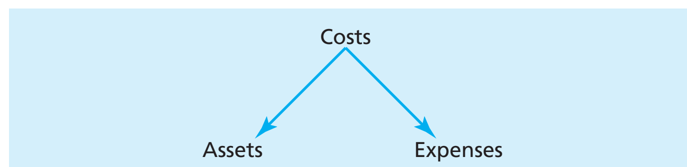
8.2 Primacy of definitions

The need to establish which definitions have primacy is examined first in the context of assets and expenses. When considering payments related to assets, decisions are frequently necessary about whether such payments should be added to the asset or should be treated as an expense. Examples of such payments are those for:

- repairs;
- decorating or re-decorating;
- extensions;
- improvements;
- replacements of parts.

All these items are 'applications' of resources in terms of the discussion of chapter 2. They are all recorded as 'debits' in the double-entry system. Those costs that do not generate assets (and are not added to existing assets) are expenses. Figure 8.1 presents this in diagrammatic form.

Figure 8.1 The relationship of payments, assets and expenses



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To summarize chapter 2 on this issue, accounting can work on one of two bases:

- *Method 1*
  - *Expenses* of 20X1 are the costs of any period that relate to 20X1; and therefore … .
  - *Assets* at the end of 20X1 are any remaining costs.
- *Method 2*
  - *Assets* at the end of 20X1 are resources controlled by the enterprise, as a result of past events, and expected to give future benefits; and therefore … .
  - *Expenses* are any remaining costs.

The IASB Framework gives primacy to the second way of defining the elements, by starting with an asset defined as follows (paragraph 49):

> a resource controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise.

This has the effect of reducing the importance of the 'matching' concept, as discussed in section 3.3.2. If an expense is postponed in order to match it against a future revenue, it would have to be stored in the balance sheet as an asset. However, this is not allowed under IAS unless the amount meets the definition of an asset. This restriction on the items to be shown as assets does not come from a desire to be prudent but from a desire to comply with a coherent framework.

The IASB gives similar importance to the definition of 'liability' as it does to 'asset'. As noted in chapter 2 (Framework, paragraph 49):

> A liability is a present obligation of the enterprise arising from past events, the settlement of which is expected to result in an outflow from the enterprise of resources … .

An obligation is an unavoidable requirement to transfer resources to a third party. Many liabilities are clear legal obligations of exact amounts, such as accounts payable or loans from the bank. Some liabilities are of uncertain timing or amount. These are called 'provisions'. Depending on the nature of legal contracts, some of these provisions are also legally enforceable, such as provisions to pay pensions to retired employees or to repair machinery sold to customers that breaks down soon after sale. Some obligations are not based on precise laws or legal contracts but would probably be enforced by a court of law based on normal business practices or, at least, the enterprise would suffer so much commercial damage if it did not settle the obligation that it cannot reasonably avoid settling it.

However, outside of IFRS requirements, some companies might make provisions when there is no obligation. Let us take the example of provisions for repair expenses. The double entry for the creation of the liability is an expense. At a year end, it has been traditional German practice to charge the expected repair expenses of the first three months of the following year. This has a tax advantage in Germany because a (tax-deductible) expense can thereby be charged earlier. The large German chemical company BASF provided an example (Annual Report, 2000):

> Maintenance provisions are established to cover omitted maintenance procedures as of the end of the year that are expected to be incurred within the first three

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months of the following year. The amount provided for is based on reasonable commercial judgement.

The double entry for a repair provision would be as follows, at the end of 20X0:

Debit: Repair expense of 20X0
Credit: Provision for repair expense (to be carried out in 20X1).

Suppose that the definition of an expense is the traditional one as outlined above (Method 1), then it would be easy to argue that the German practice is right. The reason for the need for repair of a machine in early 20X1 was the wearing out of the machine in 20X0. So, the expense could be said to *relate* to 20X0, although this answer is not completely clear.

However, let us now give primacy to the IASB's definition of 'liability'. In the above example of the repair, does the enterprise have an obligation to a third party at the balance sheet date to transfer resources? Probably not. If not, there is no liability at the end of 20X0; therefore, there can be no expense in 20X0; therefore the above double entry should not be made.

Why it matters *This asset/liability approach seems to provide clearer answers to some accounting questions compared with the expense/revenue approach. The answers are often different for the two approaches, as will be noted several times in Part 2.*

8.3 Hierarchy of decisions

8.3.1 The first stage

Having decided upon the asset/liability approach, it is then necessary to apply a three-stage hierarchy of decisions. As noted briefly before, the IASC Framework, and most others, suggest that the first stage is to ask: 'Is there an asset/liability?' The definitions outlined above are useful for this purpose. However, not all assets and liabilities should be recognized, as now explained.

8.3.2 Recognition

The second stage in the hierarchy of decisions is to ask whether an asset or liability should be recognized in the balance sheet. For example, the value of some assets may be so difficult to measure that they should be omitted from balance sheets. The Framework (paragraph 83) gives recognition criteria for an asset as follows:

(a) it is probable that any future economic benefit … will flow … to the enterprise; and
(b) the item has a cost or value that can be measured with reliability.

Let us apply these ideas to various intangible items that can be found in some balance sheets. For example, the balance sheet of Costa Crociere SpA, an Italian company, is shown as Figure 8.2.

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Figure 8.2 Balance sheet of Costa Crociere SpA

ASSETS	12.31.1997
FIXED ASSETS	
Intangible assets	
Pre-operating and expansion costs	430,788,400
Research, development and publicity	8,322,744,995
Goodwill	17,504,906,718
Other	7,728,844,063
	33,987,284,176
Tangible assets	
Fleet	1,545,376,990,994
Furniture, office equipment and vehicles	12,533,869,794
Land and buildings	13,724,722,607
Advances to suppliers	4,200,980
	1,571,639,784,375
Financial assets	
Investments	
■ In subsidiary companies	2,361,047,604
■ In associated companies	9,585,321,141
■ In other companies	441,359,551
	12,387,728,296
Receivables due from	
■ Third parties, current	810,299,509
■ Third parties, non-current	15,241,145,498
	16,051,445,007
	28,439,173,303
TOTAL FIXED ASSETS	1,634,066,241,854
CURRENT ASSETS	
Inventories	
Materials and consumables	26,935,395,415
Costs of uncompleted cruises	—
Finished goods and goods for resale	180,531,558
Payments on account for goods	181,248,671
	27,297,175,644
Receivables due from	
Customers	115,202,164,925
Subsidiary companies	597,461,385
Third parties, current	18,819,167,035
Advances to suppliers and agents	13,635,070,629
	148,253,863,974
Financial assets not held as fixed assets	
Other securities	3,811,127,944
Liquid funds	
Bank deposits	72,303,268,761
Cash and cash equivalents	14,333,697,020
	86,636,965,781
TOTAL CURRENT ASSETS	265,999,133,343
ACCRUED INCOME AND PREPAID EXPENSES	
Accrued income	1,208,376,573
Prepaid expenses	36,780,748,166
	37,989,124,739
TOTAL ASSETS	1,938,054,499,936

LIABILITIES AND STOCKHOLDERS' EQUITY	12.31.1997
STOCKHOLDERS' EQUITY	
Capital stock	123,406,166,000
Additional paid-in capital	100,019,657,500
Legal reserve	9,957,183,361
Other reserves	
Merger surplus	—
Reserve for grants received re article 55, Law 917/1986	16,626,003,837
	16,626,003,837
Cumulative translation adjustments	4,146,160,964
Retained earnings	272,122,576,707
Net income for the year	61,230,802,224
	587,508,550,593
Minority interests	13,090,651
	587,521,641,244
RESERVES FOR RISKS AND CHARGES	
Income taxes	—
Other risks and charges	9,685,481,239
	9,685,481,239
RESERVE FOR SEVERANCE INDEMNITY	16,908,221,646
RESERVE FOR GRANTS TO BE RECEIVED RE ARTICLE 55, LAW 917/1986	245,686,803,797
PAYABLES	
Bonds	271,083,750,000
Banks	
Advances	1,334,387,305
Secured loans	
■ Current	37,620,176,560
■ Non-current	407,861,924,572
Unsecured loans	
■ Current	723,271,076
■ Non-current	1,808,177,702
	449,347,937,215
Other providers of finance, current	4,543,000,000
Advances received	27,208,610,892
Suppliers, current	128,837,650,343
Subsidiary companies	—
Parent company	1,267,000,000
Tax authorities	6,056,148,078
Social security authorities	4,129,308,302
Other	28,404,868,128
	920,878,272,958
ACCRUED EXPENSES AND DEFERRED INCOME	
Accrued expenses	25,688,281,827
Deferred income	131,685,797,225
	157,374,079,052
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	1,938,054,499,936

Guarantees and commitments are detailed in Notes to consolidated financial statements

Source: Published company financial statements.

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It contains several items treated as intangible assets, including:

(a) pre-operating expenses (set-up costs of a business);
(b) research expenditure;
(c) development expenditure.

According to IAS 38 (*Intangible Assets*) the correct treatment for these three items should be as follows:

(a) Pre-operating expenses seem not to be an asset, because there is no resource with a future benefit (paragraph 56).
(b) Research expenditure can give rise to an asset but it is too difficult to demonstrate that the benefits are probable for the expenditure to be recognized in a balance sheet (paragraph 42).
(c) Development expenditure can give rise to an asset, which should be recognized if, and only if, certain criteria are met – such as there being a separately identifiable project that is technically feasible and commercially viable (paragraph 45).

Consequently, Costa Crociere's treatment of pre-operating and research expenses would not be acceptable under IAS 38, but its treatment of development expenditure might be, depending on the detailed circumstances.

Views differ around the world on these issues. Many companies in France, Italy and Spain follow Costa's practices. At the other extreme, under the rules of the United States, even development expenditure cannot be recognized as an asset unless it relates to software.

A more general European example of problems concerning the recognition of assets can be seen in the list of items shown under the heading 'Assets' in the EU Fourth Directive on company law, on which laws in EU countries (and in some others) are based. Table 8.1 shows the first two levels of headings in the English-language version of the balance sheet, from Article 9 of the Directive, as shown in more detail in chapter 6. The right-hand side of the balance sheet (capital and liabilities) is dealt with in more detail in chapter 11.

The left-hand side of Table 8.1 contains various options, reflecting previous (and present) practice in parts of Europe. Let us examine the problems:

1. *Subscribed capital unpaid* is amounts that a company could ask for from its shareholders or amounts it has asked for but are as yet unpaid. The second of these seem to be assets (receivables), but the first are rather more contingent on future events. The company may never call in the money, which would mean that the company had no probable receipt, so no asset.
2. *Formation expenses* are discussed above as 'pre-operating expenses'. The EU Fourth Directive includes a potential heading for use in some countries for these doubtful assets.
3. *Loss for the year*. This clearly has a debit balance, and its presentation on the assets side would still enable the balance sheet to balance. However, the amount is equally clearly not an asset under the IASB's definition, and so it should be shown as a negative part of capital. The use of heading 'F' in Table 8.1 was normal French practice until 1984, Spanish practice until 1990, and so on.

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Table 8.1 Balance sheet contents specified by the EU Fourth Directive

Assets	*Capital and Liabilities*
A Subscribed capital unpaid[a]	A Capital reserves
	I Subscribed capital[a]
B Formation expenses	II Share premium account
	III Revaluation reserve
C Fixed assets	IV Reserves
I Intangible assets	V Profit or loss brought forward
II Tangible assets	VI Profit or loss for the year
III Financial assets	
D Current assets	B Provisions for liabilities and charges
I Stocks	
II Debtors	C Creditors
III Investments	
IV Cash	D Accruals and deferred income[d]
E Prepayments and accrued income[b]	E Profit for the year[c]
F Loss for the year[c]	

Notes:
[a] Can be netted off; in which case the amount uncalled can be shown as an asset under A or D.II.
[b] Can be shown under D.II.
[c] Can be shown under reserves A.VI.
[d] Can be shown as creditors under C.

Why it matters *The readers of a balance sheet will sometimes be interested in net assets or total assets to assess the strength of a company, using such ratios as those introduced in chapter 7. They might be misled by phantom assets such as a former year's legal expenses of setting up the company, let alone by an asset called 'this year's loss'.*

8.3.3 Measurement

Once it has been decided that an asset or liability should be recognized, it is then necessary to measure its value before it can be put into a balance sheet. Under most systems of accounting that have been used in practice, initial recognition takes place at cost. If this were not the case, then the very act of purchasing an asset might lead to the recognition of a gain or loss.

Sometimes the cost of an asset is obvious, such as when a machine is bought in exchange for cash. However, even then, decisions have to be made about what to do with taxes on the purchase, delivery charges, and so on. The cost should include not only the invoice price of the asset but also all costs involved in getting the asset into a location and condition where it can be productive. So, this will include delivery charges, sales taxes and installation charges in the case of plant and machinery. For land and buildings, cost will include legal fees, architect's fees, clearing the land and so on, as well as the builder's bill and the cost of the land.

If a company has used its own labour or materials to construct an asset, these should not be treated as current expenses but as items that increase the cost of the

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Figure 8.3 Consolidated Statement of Income for CEPSA*

DEBIT		CREDIT	
Expenses:		**Revenues:**	
Procurements	556,672	Sales and services on ordinary activities	868,148
Personnel expenses	53,225	Excise tax hydrocarbons charged on sales	292,392
Period depreciation and amortization	31,604	Net Sales	1,160,540
Variation in operating provisions	6,469	Increase in finished products and work-in-process inventories	3,693
Other operating expenses:		Capitalized expenses of Group in-house work on fixed asset	4,079
Excise tax on hydrocarbons	292,529	Other operating revenues	3,863
Other expenses	163,972		
	1,104,501		**1,172,175**
Operating income	**67,674**		
Financial expenses	14,604	Revenues from shareholdings	2
Losses on short-term financial investments	5	Other financial revenues	2,093
Variation in financial investment provisions	178	Gains on short-term financial investments	81
Translation losses	436	Translation gains	—
		Exchange gains	363
	15,223		2,539
		Financial loss	**12,684**
Amortization of goodwill in consolidation	**383**	**Share in income of companies carried by the equity method**	**4,790**
Income from ordinary activities	**59,397**		
Losses on fixed assets	308	Gains on fixed assets	9,270
Variation in intangible assets, tangible fixed assets and control portfolio provisions	3,094	Capital subsidies transferred to income for the year	814
		Extraordinary revenues	1,947
Extraordinary expenses	16,539	Prior years' revenues	361
Prior years' expenses	376		
	20,317		**12,392**
		Extraordinary loss	**7,925**
Consolidated income before taxes	**51,472**		
Corporate income taxes	13,058		
Consolidated income for the year	**38,414**		
Income attributed to minority interests	**376**		
Income attributed to the controlling company	**38,038**		

* As published by the company for the year ended 31 December 1998

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asset; that is, they are *capitalized*. It is also possible to capitalize the interest cost on money borrowed to create fixed assets. Where labour or material is capitalized, certain formats of the income statement (described as 'by nature' in chapter 6) show this item as revenue. This is because all the labour and materials used have been charged elsewhere in the income statement. However, the items capitalized do not relate to current operations, and so they are added back as though they were revenue (see section 8.4), although they could be seen as reductions in expenses. In the example of Figure 8.3 (CEPSA of Spain), the Pta4,079 million of capitalized expenses are a partial credit for the expenses shown on the debit side.

Activity 8.A

As a digression from the discussion of the measurement of assets, it is worth checking that you can understand the format of the income statement shown in Figure 8.3. This is horizontal, by nature (see chapter 6, Tables 6.5 and 6.6). Why, for example, does CEPSA show 'operating income' as a debit, and 'financial loss' and 'extraordinary loss' as credits?

Feedback

CEPSA is using a double-entry format and showing subtotals as it goes down the page. The operating income (of 67,674) is the excess of the operating credits (1,172,175) over the operating debits (1,104,501). Strictly speaking, this is not very good double entry, because the debit balance of 67,674 for operating income is introduced as though it were an extra debit entry but not matched by a new credit entry of that size. Similarly, the financial loss of 12,684 is the excess of the four debit items of that sort over the three credit items; and the extraordinary loss of 7,925 is the excess of the four debit items of that sort over the four credit items.

Expenditure on an asset after its initial recognition should sometimes also be added in. Any payments that make the asset better than it was originally are capitalized (added) to the asset. Any other payments are expenses. The principle in Figure 8.1 is being maintained here. IAS 16, *Property, Plant and Equipment*, confirms (paragraph 23) that:

> expenditure relating to an item of property, plant and equipment … shall be added to the carrying amount of the asset when … it is probable that the expenditure increases the future economic benefits embodied in the asset in excess of its assessed standard of performance.

In general, repairs and maintenance are treated as current expenses, whereas improvements are capitalized. So, a new engine for a company vehicle will usually be treated as an expense, since it keeps the vehicle in running order rather than improving it, unless the engine is recorded as a separate asset. In contrast, the painting of advertising signs on the company's fleet of vans may well be treated as a capital item, if material in size. However, re-painting the signs would be an expense.

Obviously, the accountant needs to consider whether the amounts relating to the improvements are material enough to capitalize them. He or she tends to treat as much as possible as expense, since this is the prudent and administratively more convenient method. If the inspector of taxes can be convinced that items

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are expenses, this will also speed up their tax deductibility, although this ought not to influence the accounting.

Activity 8.B There was a list of five payments at the beginning of section 8.2, namely:

- repairs;
- decorating or re-decorating;
- extensions;
- improvements;
- replacement of parts.

Which of these should be added to the cost of an asset, and which should be treated as an immediate expense?

Feedback Repairs would normally be expensed because they do not improve the asset beyond its original state. Decorating costs might be capitalizable if they were material in size and made an asset better than it ever had been. However, re-decorating sounds like an expense. The cost of building extensions should normally be added to the asset being extended, or could create a separately identified asset. Improvements should probably be capitalized. Replacement of parts should be an expense unless the part is treated as a separate depreciable asset, so that replacement is treated as a disposal followed by a purchase.

The topic of depreciation was introduced briefly in chapter 3 and will be considered at length in chapter 9. For now, it should just be noted that the depreciation treatment of the new engine mentioned above will depend on the depreciation 'units' that the accountant works on. Normally, a whole vehicle will be a unit, and so a new engine will be a current expense. If the vehicle and the engine were separate units for depreciation, the new engine would be a capital item and the old engine would have been scrapped.

Some purchases are not made with cash but in exchange for the future payment of cash or for exchange with other assets. The general rule is that the 'fair value' of the purchase consideration should be estimated as accurately as possible. The term *fair value* is of great importance in IFRSs. It means:

> the amount at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length legal transaction. [From IASB Glossary; an arm's length transaction is one where the parties are not related.]

After initial recognition, a major problem arises concerning whether to take account of subsequent changes in the value of an asset. For assets that are to be sold, the issue really becomes not whether, but *when*, to take account of changes in value, because eventually the current value is recognized at the point of sale in the calculation of profit. Conventional accounting in most countries continues to use cost as the basis for valuing most assets until the point of sale. The arguments in favour of this approach are substantial: cheapness and greater reliability.

Historical cost is an easier and cheaper method of valuation than most, because it uses information already recorded and does not require expensive estimations

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and the audit of them. In addition, for most assets the cost is more reliably determined than the fair value or other current valuation. It will be remembered that one of the key characteristics for external reporting, as examined in the IASB's Framework, is reliability. The Framework (paragraph 44) also suggests that regulators and preparers should be aware of the cost of the accounting, to ensure that it does not exceed the benefits to the users.

The problem is that the Framework's other key characteristic is relevance for financial decisions. It is difficult to see that the historical cost is the most relevant information for making decisions – which normally requires estimation of the future, particularly the prediction of cash flows.

Activity 8.C

Suppose that an enterprise buys an investment for €800 in June 20X1. It has a market value of €1,000 at the end of the accounting year, namely at 31 December 20X1. It is then sold for €950 in June 20X2.

In order to give useful information, should the balance sheet show cost or market value at the end of 20X1?

Feedback It seems that the €800 cost is not a very useful predictor of cash flows at 31 December 20X1, particularly if the asset had been held for a longer period. Also, if only cost is recorded until sale, then a gain of €150 will be shown in 20X2 even though the asset has fallen in value in 20X2. The result of management's decision not to sell the asset early in 20X2 is not reflected in the 20X2 statements.

The main asset valuation bases that could be used instead of cost are:

- *fair value* (as defined above), which assumes that the business is neither buying nor selling;
- *replacement cost*, which takes account of the transaction costs of replacement;
- *net realizable value*, which is defined as expected sales receipts less any costs to finish and to sell;
- *value in use* (or *economic value*), which is the present value (i.e. discounted value) of the expected net cash flows from the asset.

It can easily be seen that, although these values may be more relevant than past values, they involve much more subjectivity than historical cost valuations. In practice, as will be shown, it is possible to introduce some conventions to narrow the range of choice. Also, some systems of accounting involve a choice of basis depending on circumstances. (This whole area is discussed in more detail in chapter 16.) The alternatives mentioned in this section are summarized diagrammatically in Figure 8.4.

The choice of valuation method may also depend on who requires the valuation. Owners and prospective buyers will want the most realistic estimate of the worth of the business as a going concern. On the other hand, lenders may want a much more conservative valuation, based on the lowest likely valuation of the individual assets in the event that the business has to be closed down. Managers will, of course, also be interested in accounting information. They may be prepared to put up with more estimated numbers, because they can trust themselves

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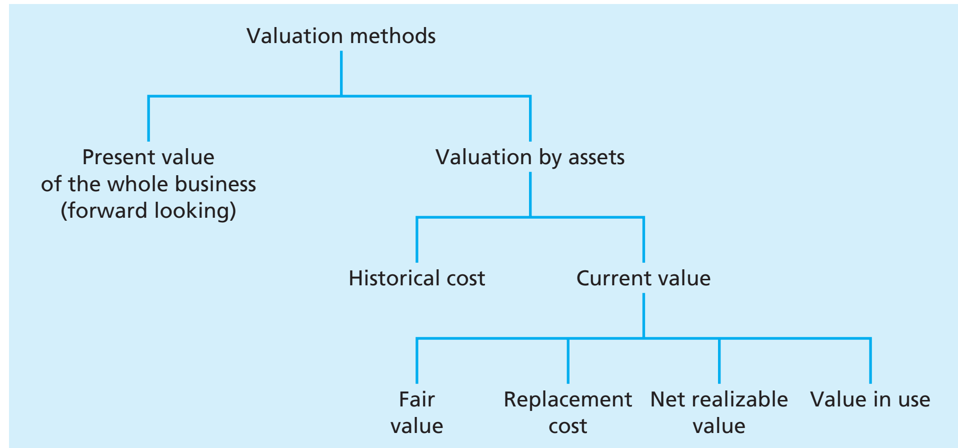
Figure 8.4 Valuation methods



to estimate fairly. However, this book is mainly concerned with information presented to outsiders – for example, in the form of published annual reports of companies. Consequently, there is a need for reliability and therefore usually an unfortunate trade-off between relevance and reliability.

In conventional accounting for most assets in most countries, the cheapness and reliability of historical cost has ensured its dominance, despite doubts about relevance. However, for certain assets – particularly those where there are active markets, such as some markets for shares – fair values are reliable. For such assets, there seems a strong argument for the use of fair values in financial reporting. In the case of IASB standards, there has been a gradual move toward the use of fair values for various assets since the beginning of the 1990s.

Why it matters *A company owns two identical office blocks next door to each other in the centre of Stockholm. They are used as the company's head office. Office 1 was bought in 1980 for €1m and Office 2 was bought very recently for €4m. Under conventional accounting practice, Office 1 will be shown at less than €1m because it has worn out (depreciated) to some extent since 1980. The identical Office 2 will be shown at €4m. Is this a fair presentation? You can perhaps see, by this example, why the topic is important.*

Of course, even conventional accounting sometimes takes account of market values before the sale of assets. For example, in order to be prudent, inventories are usually valued at the lower of cost and net realizable value, and fixed assets are written down below cost if their value is impaired.

All the issues of this section are discussed again in the following chapters.

8.4 Income recognition

It has been agreed, in nearly all countries, that the recognition of income does not always need to await the receipt of cash; that is, the accruals convention is used. Consequently, the determination of the exact moment when income should be recognized becomes a major practical problem. In many countries, the

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answer is expressed in terms of 'realization': income should be recognized in the income statement when it is realized. In practice, this does not help much because there is no clear way to define what is realized, if it does not mean 'received in cash'. One possibility is to define *realized* as having either received cash or a contractual right to cash. This allows income recognition before a customer pays a bill.

Activity 8.D

An example may be useful here. Suppose that a manufacturing business produced a batch of output in the following way:

12 January	Buy raw materials; store them
19 February	Begin work on processing the materials
3 April	Finished goods produced; store them
10 May	Receive order for goods; order accepted
17 May	Goods delivered; customer invoiced
5 June	Customer pays invoice for goods

It is clear that the eventual profit will be the difference between the final sales receipts and the various costs involved. However, at what point should the income be recognized? Is the profit earned gradually over the manufacturing process, or when a contract of sale is agreed, or when the goods are delivered, or when cash is finally paid?

Feedback The answer to the foregoing question for accountants is given by the *realization convention* – that is, profits that have not been realized are not recorded. In this case, the convention would require that income is not recognized until a sale has been agreed, and possibly even later. It must be admitted that 'realized' is a vague word. This postponement of the recognition of income conforms with the convention of prudence and with other aspects of reliability, because there is no reasonable certainty of income until the sale is made.

In the above example, the sale is on credit rather than for cash, but the acquisition of a receivable is considered to be sufficiently reliable. In practice, income recognition usually occurs a little later: when control of the goods passes and the invoice is raised (17 May in our example).

Sometimes the case is more complicated than in Activity 8.D. Suppose that a Dutch company has delivered goods to a US customer who will later pay an agreed amount of US dollars. If the US dollar rises by the balance sheet date, so that the Dutch company now has a contractual right to receive an amount worth more in euros, has the company made a further gain? It seems obvious that the company is better off, but is the gain realized? Even this relatively simple question is contentious, and is addressed further in chapter 15.

The IASB's approach, as examined earlier in this chapter, is to give primacy to the definition of assets and liabilities, such that revenue is defined in the following way (Framework, paragraph 70):

> Income is increases in economic benefits during the accounting period in the form of inflows or enhancements of assets or decreases of liabilities that result in increases in equity, other than those relating to contributions from equity participants.

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Confusingly, the Framework contrasts the word 'income' (rather than the word 'revenue') with the word 'expense'. The Framework uses the word 'revenue' to mean income from customers, but says that there is no important distinction between that and any other income (called gains).

The definition quoted above of income seems to suggest that special income recognition criteria are not necessary because any increase in an asset is an income. However, there are two sorts of problems here:

- practical problems for the recognition of revenue from the sale of goods and rendering of services; and
- major theoretical problems of when to recognize the gains on assets if they are revalued in the balance sheet.

The IASB addresses the first of the above two issues in IAS 18, *Revenue*, in approximately the same way as occurs already in most countries. In summary, revenue from the sale of goods is to be recognized when control and risks have passed to the customer. For services provided, recognition should occur when both the revenue and the stage of completion can be measured reliably. This is of particular relevance where there are long-term contracts (see chapter 10).

The second issue (gains on unsold assets) is more of a problem. For example, where a company owns listed equities that rise in value, it was noted earlier that it might seem relevant and reliable to record the assets in the balance sheet at the higher values. Are such gains to be treated as income? The IASB concludes that sometimes they should indeed be (see chapter 11).

However, when buildings are revalued (see chapter 9), the resulting gains are not treated as income but go to a 'second income statement'. As noted in chapter 6, two income statements are now to be found in some form under the rules of the IASB, the UK and the US. A British example is shown as Figure 8.5, where the two statements are called:

- a profit and loss account, and
- a statement of total recognized gains and losses.

Some of the issues raised by Figure 8.5 are too complex for us to consider at this stage, but note that gains and losses appear in both statements. However, there is no clear rationale for the distinction between the gains in one statement and those in the other. In conclusion, a reform of the income statement is likely, such that there will be only one statement containing all 'income' as defined above (see section 6.3).

Why it matters *Does a company gain when its investments rise in value, although it has not sold them? The answer seems intuitively to be 'yes'. Should this gain be shown as income? If not, where should it be shown? The readers of financial statements try to use the profit figure to help them to make financial decisions. So, we need answers to these questions. Even if there are several plausible answers, it may be better to impose one of them, so that there is consistency between companies.*

A further interesting complication is that revenues (such as sales) are recorded as gross receipts, whereas gains (such as those on selling fixed assets) are recorded net. So, the sale of inventory at a loss is still recorded as 'revenue'.

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Figure 8.5 Extract from the financial statements of Cadbury Schweppes plc for the years 2002 and 2001 (£m)

GROUP PROFIT AND LOSS ACCOUNT

	2002	*2001*
Turnover	**5,298**	4,960
Operating costs		
Trading expenses	**(4,315)**	(4,030)
Goodwill amortisation	**(64)**	(46)
Major restructuring costs	**(53)**	(53)
	(4,432)	(4,129)
Group Operating Profit	**866**	831
Share of operating profit in associates	**58**	57
Total Operating Profit Including Associates	**924**	888
Profit on disposal of fixed assets	**9**	–
Profit on sale of subsidiaries and investments	**3**	31
Profit on Ordinary Activities before Interest	**936**	919
Net interest	**(106)**	(106)
Profit on Ordinary Activities before Taxation	830	813
Taxation		
– On operating profit, associates and interest	**(253)**	(240)
– On profit on sale of fixed assets, subsidiaries and investments	**(2)**	(1)
	(255)	(241)
Profit on Ordinary Activities after Taxation	**575**	572
Equity minority interests	**(3)**	(5)
Non-equity minority interests	**(24)**	(25)
Profit for the Financial Year	**548**	542
Dividends paid and proposed to ordinary shareholders	**(230)**	(222)
Profit Retained for the Financial Year	**318**	320

STATEMENT OF TOTAL RECOGNISED GAINS AND LOSSES

	2002	*2001*
Cadbury Schweppes plc	**116**	354
Subsidiary undertakings	**404**	163
Associated undertakings	**28**	25
Profit for the Financial Year	**548**	542
Net currency translation differences	**(217)**	–
Writedown on previously revalued assets	–	(3)
Total Recognised Gains and Losses for the Year	**331**	539

SUMMARY

- This chapter examines some fundamental issues relating to the recognition and measurement of the elements of financial statements. The implications of basing financial reporting on the definitions of 'asset' and 'liability' are explored. For example, expenses cannot be postponed unless they create an asset (as defined), and they cannot be anticipated unless they create a liability (as defined).
- The fact that something is an asset or a liability does not automatically lead to its inclusion in a balance sheet. It must still meet the recognition criteria: basically being reliably measurable.

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- Measurement is initially made at cost, which includes a number of expenses related to the purchase and to subsequent improvement of the asset.
- There are various possibilities for subsequent revaluation. Many of these provide measurements that may be more relevant but less reliable.
- Income recognition depends in principle upon movements in assets and liabilities. However, on a day-to-day basis, practical rules are needed for the exact date of recognition. Also, not all increases in assets are presently treated as income.

References and research

The main, relevant IASB documents for this chapter are:

- The Framework.
- IAS 18 (revised 1993), *Revenue*.

Notes on the research related to recognition and measurement of particular assets and liabilities are included in the following chapters.

Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

8.1 Which of the following would *not* be included in the cost of land?

(a) Commission paid to an agent for finding the land.
(b) Cost of clearing an unneeded building from the land.
(c) Annual property tax paid to local government.
(d) Legal fees for purchase.

8.2 A practical decision to expense small capital expenditures rather than to record them as plant assets and depreciate them is probably made on the basis of the convention of:

(a) Consistency.
(b) Materiality.
(c) Conservatism.
(d) Full disclosure.

8.3 Accountants include the following as balance sheet assets:

(a) All items on which cash is spent.
(b) All items that the business gets benefit from.
(c) Items that have been paid for and will bring future benefit.
(d) Only the physical items under (c).

8.4 A gain on the value of a factory building would be recorded in the income statement when:

(a) It is sold.
(b) Cash from the sale is received.
(c) Its increased value is recorded in a balance sheet.
(d) Its selling price rises.

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8.5 Which of the following transactions results in an immediate increase in expenses?

(a) Purchase of office equipment on credit.
(b) Payment of accounts payable.
(c) Payment of wages.
(d) Repayment of bank loan.

8.6 In practice, accountants record sales revenue when:

(a) An order is placed by a customer.
(b) Cash is received for the sales.
(c) A product is finished and ready for sale.
(d) An invoice or account is sent to the customer.

8.7 A capital expenditure results in a debit to:

(a) An asset account.
(b) An expense account.
(c) An equity account.
(d) A liability account.

8.8 Depending on the circumstances, the value of an asset could reasonably be thought of as:

(a) Its replacement cost.
(b) Its realizable value in a market.
(c) The future benefits that will flow from it.
(d) Any of the above.

8.9 The IASB Framework gives primacy of definition to:

(a) Expenses and income.
(b) Payments and receipts.
(c) Equity.
(d) Assets and liabilities.

8.10 According to the IASB's Framework, an asset is something:

(a) Owned.
(b) Controlled.
(c) Used.
(d) Owned and controlled.

8.11 The following would *not* be recognized as assets under IFRS rules:

(a) Research costs.
(b) Costs of setting up a business.
(c) Re-decoration of a building.
(d) All of the above.

Exercises

Feedback on the first two of these exercises is given in Appendix E.

8.1 Explain, in a way that is understandable to a non-accountant, the following terms:

(a) asset.
(b) liability.

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(c) revenue.
(d) expense.
(e) equity.

8.2 'The historical cost convention looks backwards but the going concern convention looks forwards.'

(a) Does traditional financial accounting, using the historical cost convention, make the going concern convention (see chapter 3) unnecessary? Explain your answer fully.
(b) Which do you think a shareholder is likely to find more useful: a report on the past or an estimate of the future? Why?

8.3 Please arrange the following five symbols into an equation with no minus signs in it:

A_1 = assets at end of period.
L_1 = liabilities at end of period.
OE_0 = owner's equity at beginning of period.
R_1 = revenues and gains for the period.
E_1 = expenses for the period.

8.4 Why is it necessary to define an expense in terms of changes in an asset (or vice versa) rather than defining the terms independently?

8.5 What general rule can be used to decide whether a payment leads to an expense or to an asset?

8.6 What disadvantages are there in measuring assets on the basis of historical cost?

8.7 What various alternatives to historical cost could be used for the valuation of assets? Which do you prefer?

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9

Tangible and intangible fixed assets

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- explain the distinction between tangible and intangible assets, and that intangibles are becoming more important;
- outline the difference between fixed and current assets;
- decide which payments lead to fixed assets that should be recognized on a balance sheet;
- explain why IFRSs and some other standards require certain leases to be capitalized by the lessee, and why perhaps it would be sensible to require this for all leases;
- choose between the methods available for depreciation of fixed assets;
- perform depreciation calculations using different methods;
- distinguish between depreciation and impairment;
- explain why and how assets can be revalued above cost;
- show how investment property might be distinguished from other property and accounted for differently.

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9.1 Preamble: a tale of two companies

In 1994, the four largest companies in the world, as measured by sales value, were all Japanese, but the fifth-largest was the US company General Motors. By 1998, none of the top four were Japanese, and the largest in the world was General Motors. These international comparisons are difficult, partly because of large exchange rate movements. Therefore, let us concentrate for the moment on the United States.

In both 1994 and 1998, General Motors was the largest US company by sales. It was nearly the largest in terms of assets, net assets and profits, but somewhat further down the list (15th in 1994/5) in terms of stock market value. It was a typical large US corporation: it used large tangible assets (machines and factories) to make other things you could see (cars). You could say that it was a bit dull: of the 500 largest, it was the 375th firm in terms of its return to investors over ten years. These figures are shown in Table 9.1. Concentrate on the numbers in boxes.

Table 9.1 A tale of two companies, in numbers

	1994/5	
Rank by:	*General Motors*	*Microsoft*
Sales	1	250
Assets	3	262
Net assets	4	95
Profits	3	45
Market value	15	10
Return to investors (10 years)	375	(too young)
	1998/9	
Sales	1	109
Assets	12	126
Net assets	28	24
Profits	29	11
Market value	42	1
Return to investors (10 years)	304	4

Sources: Derived from *Fortune 500*, 1995 and 1999. © 1995, 1999 Time Inc. All rights reserved.

In 1994, a small computer software company called Microsoft was ranked 250th in sales and 262nd in assets. It looked successful because it was ranked 45th in profits, although it was too young to have a ten-year record. Despite its small size, an anticipation of success led the market to value this small young company at 10th in market value rank in the US.

By early 1999, Microsoft was the most valuable company in the United States (and the world), although it was still ranked only 109th in terms of sales and 126th in terms of assets. Microsoft uses a very small number of tangible assets to make a product that is intangible.

Why it matters *Accounting has grown up in a world where tangible items were the main fixed assets to account for, and cost was the main measurement basis. General Motors can be accounted for like that. However, Microsoft is all about intangibles and values. Most of the intangibles have no identifiable cost. Conventional accounting is not well suited to*

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the changes whereby Microsoft became so rapidly more important than General Motors. If we do not want financial reporting to be left behind in a rapidly changing world, we will have to get better at accounting for intangibles and for values.

9.2 Introduction

This chapter examines the recognition and measurement of tangible and intangible fixed assets. The term 'fixed assets' is not generally used in IFRSs. The same is true for US standards, but the term is found in European laws based on the EU Fourth Directive. The term 'non-current asset' could be used instead. A *fixed asset* is one that is intended for continuing use in the business. This is a somewhat vague definition, which rests upon what the management of a company intends to do. However, this vagueness is difficult to avoid.

In IASB terms, tangible fixed assets are referred to as 'property, plant and equipment', but IAS 16 also has to distinguish them from inventories to be sold to customers by noting that property, plant and equipment is:

(a) held for use in production or supply of goods or services;
(b) expected to be used during more than one period. [summary from paragraph 6]

The IASB refers in IAS 38 (paragraph 7) to an intangible asset as:

> an identifiable non-monetary asset without physical substance held for use in the production or supply of goods or services …

This again distinguishes such assets from inventory, suggesting that all the IASB's intangibles are also 'fixed'.

There are no detailed lists of examples of fixed assets in IAS 16 or IAS 38, nor in the examples of balance sheets in IAS 1. However, the EU Fourth Directive, on which most European laws are based, contains the following list in its balance sheet formats (Articles 9 and 10):

Fixed Assets

I *Intangible assets*
1. Costs of research and development
2. Concessions, patents, licences, trade marks and similar rights and assets
3. Goodwill
4. Payments on account

II *Tangible assets*
1. Land and buildings
2. Plant and machinery
3. Other fixtures and fittings, tools and equipment
4. Payments on account and tangible assets in course of construction

Activity 9.A

Would the following items usually be fixed assets or current assets:

- Motor vehicles?
- Investments in shares of other companies?

If you answer 'fixed', could they ever be current? If you answer 'current', could they ever be fixed?

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Feedback An enterprise's motor vehicles would usually be fixed assets, even though they move! 'Fixed' refers to permanence of use in the business. However, if the enterprise was in the business of selling motor vehicles then those to be sold would be current assets.

An enterprise's investment in shares would often be fixed. This would certainly be the case for investment in subsidiary companies. However, it is possible to buy shares for the purposes of trading or for a temporary store of value. In these cases, the shares would be current assets. Investments are considered in more detail in chapter 11.

9.3 The recognition of assets

As outlined briefly in chapter 8, it is necessary first to identify whether items are assets and then to decide whether to recognize them in a balance sheet. It was explained that, under IFRS, certain items are not thought to be assets (e.g. the set-up costs of a company). Other items may be assets but are not to be recognized as such because it is not probable that benefits will flow or because the assets cannot be measured reliably. For example, IAS 38 specifically rules out the recognition of research expenditures.

Particular problems are also met with other intangible assets that are created by the company itself, such as brand names or customer lists. According to IAS 38 (paragraph 51) these cannot be capitalized (i.e. recognized as assets) unless they have been bought from somebody else, because otherwise a cost or value is difficult to determine. The same applies even more clearly to any increase in value of the company itself caused by loyalty of customers or increasing skills of staff. Such internally generated 'goodwill' cannot be capitalized by the company.

By contrast, some intangible assets are purchased separately and have a clear cost. For example, a company could buy the right to use a brand name in a particular country for a particular period. Sometimes they also have a clear market value. This might apply to taxi licences, milk quotas, airport landing rights, etc.; all these should be capitalized. As noted in chapter 8, the same applies to certain development expenditure where it can be reliably identified and measured.

Sometimes, intangibles are purchased as part of a package of assets or of a whole company. Where the intangibles can be separately identified and valued, it may be helpful to record as many of them as possible. The balance of the purchase cost in excess of the identified net assets is assumed to be an asset, called *goodwill*.

Let us take the example of a company (X) that buys a segment of another company (Y) for €1m cash. Company X is buying some assets that form a going concern business from company Y; it is not buying that company. The following assets are bought, whose values can be estimated as:

land	€300,000
building	€150,000
machinery	€90,000
inventory	€70,000
receivables	€80,000
patent	€50,000
Total	€740,000

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Assuming that the company is not taking on any liabilities, it seems to be paying €260,000 too much for the assets. The differential is that asset called goodwill. In certain countries, there are special terms for this to distinguish it from other types of goodwill. For example, in France, it is called *fonds commercial* and, in Italy, *avviamento*. In France it is possible to capitalize various forms of intangible asset, including various types of goodwill. The split of the assets in the balance sheet of L'Oréal (the French cosmetics company) is shown as Table 9.2, illustrating the large proportion of intangible assets, most of which is 'business value' (*fonds commercial*).

It was pointed out that company X in the above example bought the assets. It did not buy (the shares in) another company. This last type of business combination is more complicated and gives rise to goodwill arising on consolidation. This is dealt with as part of group accounting in chapter 14.

Table 9.2 L'Oréal's assets as at 31 December 2002

	€m	*% of total assets*
Intangible assets	4,011	26.8
Goodwill on consolidation	778	5.2
Tangible assets	1,747	11.7
Investments	1,594	10.6
Current assets	6,842	45.7
Total assets		100.0

Activity 9.B In the above example of a company apparently paying €260,000 too much for the business, why would it be willing to do so?

Feedback The company is willing to do this because it is buying the business as a going concern that already has other useful features, such as loyal customers for its existing products, access to this list of customers, and trained staff – in other words, the ability to make future profit.

As noted in section 9.1, intangible assets are often important in the context of many rapidly growing companies at the beginning of the twenty-first century.

For *tangible* fixed assets, the problems of recognition are generally smaller than for the above intangible assets. This is because it is usually possible to physically identify tangible assets and to establish a cost or value.

Although the standards of the IASB (and of most national laws) seem to be more restrictive for intangible assets than for tangible assets, this does not mean that intangible assets cannot be recognized. The sort of intangibles that might be included in an IFRS balance sheet are:

- software development costs;
- other development costs;
- purchased patents, licences, trademarks and brands;
- purchased goodwill.

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9.4 Should leased assets be recognized?

A company may decide to acquire the use of fixed assets without buying them. There may be tax or liquidity advantages in doing this. For example, if an industrial company has little taxable income, it may not be able currently to use the tax depreciation allowances on the purchase of plant and machinery. However, if a financial company buys the assets and hires them to an industrial company, the financial company may be able to gain the tax allowances, thus enabling a low rental charge.

In the case of certain long-term legal arrangements between the financial company (the lessor) and the industrial company (the lessee), the situation is very much as though the lessee had bought the plant. For example, the lessee may expect to keep the asset for the whole of its productive life, and there may be an option to purchase the plant at a future date at a low price from the lessor. In such cases, it can be argued that the commercial substance of the lessee's arrangements is that he has the asset and has contracted obligations that are liabilities. This, of course, is not the superficial legal form of the arrangements, because the lessor is still the owner even though the lessee has the exclusive legal right to use the assets.

For example, consider company A and company B. The first has borrowed €10m and bought machines with the money. Company B has borrowed no money, but has long-leased machines that would have cost €10m to buy. If company B accounts only for the legal form of the arrangement, its financial statements will look unfairly better than Company A's (see the first two balance sheets of Figure 9.1). That is, B will seem to have a better profit in relation to assets used (because assets seem smaller) and show smaller liabilities.

Figure 9.1 Capitalized leases

Company A		Company B (form)		Company B (substance)	
Fixed assets +10	Loans +10			Rights to fixed assets +10	Lease obligations +10

Accountants in the United States were the first to adjust for this problem by capitalizing certain leases – which in our example would mean adjusting company B's balance sheet to the position on the right in Figure 9.1. By the 1980s, this had also become standard procedure in some other countries; for example, in the United Kingdom (SSAP 21) and the Netherlands (Guideline 1.05).

In countries with a more literal interpretation of legal requirements, such as Germany and Italy, either leases are not capitalized or the definition of capitalizable leases is such that leases are rarely capitalized in practice. By the late 1980s, many large French groups were capitalizing in their consolidated accounts but not in their individual company accounts (because of legal and tax issues). The

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Spanish law of 1989, which implemented the EU Fourth Directive, required the capitalization of certain leases. Interestingly, although in most countries capitalized leases are included under tangible fixed assets, in Spain they are shown under intangibles. This recognizes the legal point that the company owns the *right* to the assets, not the assets themselves. In terms of the classification of accounting systems suggested in Figure 5.2 of this book, the 'strong equity' systems tend to exhibit capitalization and the 'weak equity' systems do not.

The above discussion concentrates on those leases that are recognized as assets and liabilities of the lessee. These are called 'finance leases' by the IASB and in the UK, and 'capital leases' in the US. For these leases, the lease payments to the lessor are treated as partly a reduction in lease liability and partly a finance expense. The last of those is made to decline each year as the recorded lease liability itself declines. That is, the entries for the lease payments are:

Debit:	Finance charge
Debit:	Lease liability
Credit:	Cash

Also, the asset under a finance lease wears out, and so it is depreciated – as with any other asset – over its life (see section 9.5). So, for finance leases, there are expenses for both finance and depreciation but no rental charge.

The other leases that are not capitalized but are treated as rentals are called 'operating leases'. These are accounted for by recognizing the lease rental payments:

Debit:	Lease rental expense
Credit:	Cash

Why it matters

For its 1998 group financial statements, the German national airline, Lufthansa, adopted the IAS approach for the first time. Compared with its previous German accounting, this meant capitalizing a number of leases. The effects on the balance sheet of this particular change were to reduce net assets by DM722 million (14 per cent). This makes a large difference to the impression given by the balance sheet. For liabilities, the rise was unclear but would generally be much larger than the net effect (of assets minus liabilities). This will have a major effect on gearing ratios (see chapter 7). Many other companies are still not using IASs or standards like them, and so they are obscuring their assets and liabilities.

Incidentally, Lufthansa also largely removed its charter airline (Condor) from its balance sheet by a complex partial sale. This hides some of the leases, which would otherwise have made things look even worse.

An obvious question is: where exactly is the dividing line between finance leases and operating leases? IAS 17, *Leases*, defines a finance lease as (paragraph 3):

> a lease that transfers substantially all the risks and rewards incident to ownership of an asset. Title may or may not eventually be transferred.

This is fairly vague, particularly for auditors and particularly as companies may wish to try to avoid capitalizing leases so that they do not have to show extra liabilities.

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European laws (except tax laws) are generally silent on this issue, because the matter is not covered by the EU Fourth Directive. However, in the UK, SSAP 21 adds some precision about a finance lease (paragraph 15):

> [A finance lease] should be presumed ... if at the inception of a lease the present value of the minimum lease payments ... amounts to substantially all (normally 90 per cent or more) of the fair value of the leased asset.

The US standard (SFAS 13) contains something similar, plus other criteria, such as the lease lasting for 75 per cent or more of the useful life of the asset.

However, where do the 90 per cent and the 75 per cent come from? Why not 88 per cent and 77 per cent? Furthermore, why does the definition of a finance lease refer to risks and rewards, whereas the Framework's definitions of asset and liability (see chapter 8) do not? It seems that, as the leasing standards were written before the Framework was fully established, they are not really consistent with it.

At the end of 1999, the IASC and several other standard setters issued proposals for dramatic reform of lease accounting. They concluded that, if the lessee has signed a contract to pay the lessor, there is always a liability. And, if the lessor has signed a contract giving control of the asset to the lessee for a period, the lessee always has an asset. In conclusion, all uncancellable leases should be treated as finance leases. Standards to this effect are being prepared. This conclusion is an illustration of putting into effect the Framework's approach that starts with the consideration of assets and liabilities.

The notion of 'commercial substance over legal form' can now be seen as an unnecessary and misleading contrast. It is much simpler to rely on the definitions of asset and liability, which depend in each case on *legal* rights of control and *legal* obligations to pay money. The recognition of assets and liabilities requires one to identify the relevant legal rights, which are the source of the economic substance.

Why it matters *If the IASB proposals to make all leases into finance leases are turned into standards, a large number of leases presently treated as rentals will appear on balance sheets as assets and liabilities. This will, for example, make ratios of debt to equity (gearing ratios; see chapter 7) look much higher because liabilities will increase but the increase in assets will not directly affect gearing.*

9.5 Depreciation of cost

9.5.1 The basic concept

The topic of the measurement of those assets that have been recognized was introduced in chapter 8. It was explained there that assets are initially recognized at cost. Subsequently, in most parts of the world the measurement of tangible and intangible assets continues to be based on cost, after taking account of wearing out (depreciation) and loss of value (impairment). This section examines depreciation; the next, impairment.

If a business buys goods or services (e.g. materials, electricity or labour) that are to be used up in the current year in the process of earning profit, they are charged

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to the income statement. The amount charged in the accounting year is not the amount paid in the year but the amount that relates to the year. This is a practical working-out of the accruals convention, examined in Part 1.

A further result of the accruals convention relates to cases where a company buys goods of significant value that are *not* to be used up in the current year (fixed assets). In such cases the cost should be treated as a capital purchase, not as a current expense. The difference in effect can be seen on the balance sheets of Figure 9.2. The top half of the figure deals with the effect of a current expense (e.g. wages), and the bottom half deals with the purchase of a fixed asset (e.g. a machine).

Figure 9.2 Balance sheet representation of goods that are not used up in the current year

(1) Expenses of 10,000:

Assets		*Capital and liabilities*	
Current assets:	−10,000 cash	Capital:	−10,000 profit

(2) Capital purchase of 10,000:

Assets		*Capital and liabilities*	
Fixed assets:	+10,000 machine		
Current assets:	−10,000 cash		

In the case of an asset that does not wear out but has a potentially unlimited useful life, it seems reasonable that no expense should ever be charged for using it up. This generally applies to land. However, it would be unreasonable to charge nothing against profit for the use of a machine that is being worn out. If the machine will last for ten years, the cost is spread over ten years rather than charged totally to the year of purchase or not charged at all.

Activity 9.C What various reasons might there be for a fixed asset (such as a machine) gradually to become economically less useful?

Feedback An asset may be used up or become less useful for a variety of predictable reasons, which can be divided into two categories:

(a) *physical reasons*: deterioration or wearing out with use; the expiration of a lease or patent; the exhaustion of a mine;
(b) *economic reasons*: the obsolescence of the asset or the product that it makes; a change in company policy leading, for example, to the hiring of machines; expansion of the business, causing an asset to be inadequate in size or performance.

Just as it is reasonable to charge for the services provided, so it seems reasonable to consider that the fixed asset is used up because it has provided the services. Therefore, accountants allocate the cost to expense (in the income statement) over the life of the asset and recognize (in the balance sheet) that the asset is

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being used up. The 'life' in question is the *useful economic life* to the present owner, which takes into account the fact that a machine may be obsolete before it is worn out. The expense is labelled 'depreciation'.

IAS 16 (paragraph 6) confirms this notion:

> *Depreciation* is the systematic allocation of the depreciable amount of an asset over its useful life.
>
> *Depreciable amount* is the cost of an asset or other amount substituted for cost in the financial statements, less its residual value.

So, depreciation aims to distribute the cost of assets, less salvage value (if any), over the estimated useful life of an asset in a systematic and rational manner. It is a process of allocation, not of valuation.

A slightly more detailed, but broadly consistent definition can be found in the UK's FRS 15:

> *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 changes in technology or demand for the goods and services produced by the asset.

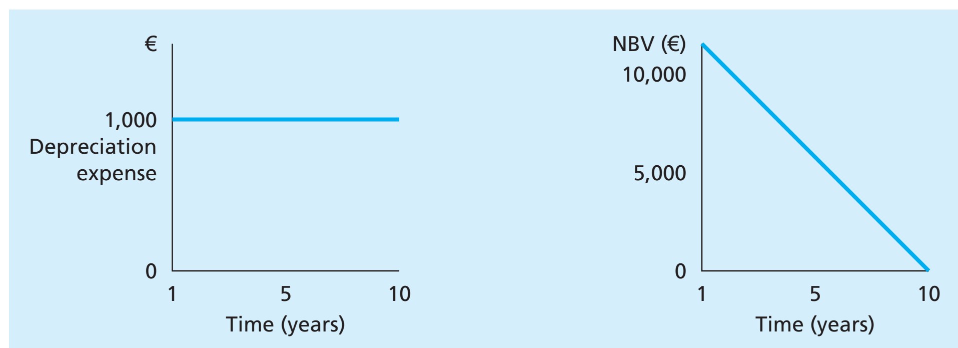
The laws around Europe also contain instructions consistent with this, based on Article 35 of the EU's Fourth Directive.

As an example of depreciation, suppose that a €10,000 machine is estimated to last ten years and to be worthless at the end. An obvious and simple method of depreciation would be to allocate €1,000 of the cost as an expense for each of the ten years. For example:

1 January 20X2	Purchase:	machine	+10,000
		cash	−10,000
31 December 20X2	Depreciation recognized:	machine	−1,000
		profit	−1,000

So the machine stands at 10,000 – 1,000 = 9,000 in the balance sheet. This 9,000 is the amount of the cost not yet treated as an expense. It is called the

Figure 9.3 Straight-line depreciation



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carrying value, or sometimes the *net book value* (*NBV*) or the *written-down value* – although it is not, of course, a 'value' in any market sense. This method of depreciation is called the *straight-line* or *fixed instalment* or *constant charge method*. It is illustrated in Figure 9.3.

Activity 9.D Suppose that, for another machine costing €10,000, a scrap value (residual value) of €3,000 was estimated and life was expected to be seven years. What would the annual depreciation charge be then?

Feedback Again, it would be €1,000, as shown in Table 9.3. At the end of year 6 in the example of Table 9.3, the balance sheet or the notes would show:

	€
Fixed asset: cost	10,000
Cumulative depreciation	6,000
	4,000

Table 9.3 Straight-line depreciation of net cost

End of year	*Depreciation charge recognized*	*NBV*
0	—	10,000
1	1,000	9,000
2	1,000	8,000
3	1,000	7,000
4	1,000	6,000
5	1,000	5,000
6	1,000	4,000
7	1,000	3,000

9.5.2 What depreciation is *not* for

Having examined the basic concept, it is useful now to make clear what depreciation is *not* for, under the three headings below. Many non-accountants misunderstand this.

Not for valuation

First, depreciation is not supposed to be a valuation technique. Although provisions for depreciation are deducted from the cost of fixed assets in order to show a net book value on a balance sheet, that NBV is not supposed to represent the amount for which the assets could be sold at the balance sheet date. The NBV is merely the cost that has so far not been allocated as an expense to the income statement.

In principle, of course, it would be possible to allocate depreciation on the basis of declining market values. However, this leads to all the problems of estimations – for example, expense of valuations, unreliability and difficulty of auditing.

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Furthermore, some assets decline in value very rapidly and it is not clear that allocation of cost over useful lives should be based on that process. For example, specialized assets such as power stations or telephone exchanges may be effectively unmarketable, and motor cars lose a large proportion of value in their first month on the road. But even though they lose value rapidly, they do not generally become less useful to the business so rapidly.

Another approach would be to take the view that the value of an asset to a firm is not the market value but the discounted expected net cash inflows from the asset (the 'value in use' of chapter 8). One needs to identify the net inflows of the company with and without the asset in order to measure the net contributions of the asset.

The net cash inflows of the asset will be called R_1 in year 1, R_n in year n and so on. It has been briefly mentioned in chapter 8 that future flows need to be discounted in order to assess their present values. The present value of an asset (PV_0) can therefore be said to be given by:

$$PV_0 = \frac{R_1}{1+r} + \frac{R_2}{(1+r)^2} + \cdots + \frac{R_n}{(1+r)^n},$$

where n is the life of the asset and r is the appropriate discount rate. This rate may be the cost of capital or the rate of return on funds (see chapter 17). The above equation can be restated as:

$$PV_0 = \sum_{t=1}^{t=n} \frac{R_t}{(1+r)^t},$$

where t is the year. One year later the asset's value (PV_1) will be given by:

$$PV_1 = \sum_{t=2}^{t=n} \frac{R_t}{(1+r)^{t-1}},$$

and the depreciation for the year (measured by loss of value) will be $PV_0 - PV_1$.

There are, of course, great practical difficulties in isolating the net cash flows or cost savings of an asset after purchase. However, if it could be done it would lead to a justifiable current measure of the using up of the asset's value during the year, taking into account repairs and maintenance or deterioration in performance caused by lack of them. However, this would not be the allocation of cost, and would not fit with the conventional workings of accounting.

Not for replacement

The second potential misunderstanding about depreciation is that it is a mechanism for providing funds for the replacement of the depreciating asset. The double entry for depreciation is:

Debit: Depreciation expense
Credit: Value adjustment (or allowance or provision) for depreciation.

The credit entry is stored separately from the asset, so that the original cost and the accumulating depreciation allowance can be seen. In the balance sheet, it is usual to show the two amounts netted off, called the depreciated cost, the net book value or the written-down value. It is best to see the accumulating credit

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balance as a value adjustment or allowance against the asset. However, the amount is often called a provision, which is confusing because that word is also used to mean a type of liability (see chapter 11).

The above double entry shows that there is no direct effect on cash or investments (except for any tax reduction; see below). Unless amounts of cash that are equivalent to the depreciation charges are put into a tin box or another easily accessible store (e.g. an investment fund), an amount equalling the cost will not be specifically available in liquid form at the end of the asset's life. Even if cash is available, the price of a replacement asset may have risen, and so the cash will be insufficient. Also, in many cases the company will not want to buy a similar asset but one that is technologically more advanced, bigger or concerned with the production of completely different goods.

Nevertheless, depreciation may help with replacement because it may help to maintain the original capital (in terms of historical money), because depreciation reduces profit available for distribution. So, less cash may be distributed, and this will build up in the company, perhaps converted into a variety of different assets such as debtors, stock and even fixed assets.

Let us look at an example of how charging depreciation may aid replacement in the extreme cases where either:

(a) no depreciation is charged (company A), or
(b) depreciation *is* charged, and the assets that are consequently undistributed are kept as current assets (company B).

The two companies are assumed to be identical in other ways, and both distribute all their profits. They start by buying a fixed asset for €10,000, which will last for ten years and have no scrap value. There are also €10,000 of current assets. Figure 9.4 shows the situation after the first year. If this continues for another nine years, company A will have a worthless fixed asset and €10,000 of current assets, and will see that its capital is only €10,000. Company B will have a worthless fixed asset but €20,000 of current assets because it distributed €10,000 less 'profits' than company A did. So, B can purchase another fixed asset and continue business with its capital intact; A will have a serious financial problem. In essence, depreciation assists replacement by ensuring that profit is only measured or distributed after some form of maintenance of capital.

Figure 9.4 The effect on assets of not charging depreciation

Company A

Gross profit	5,000	
less Expenses	(3,000)	
Net profit	2,000	distributed

Balance sheet

Fixed assets	10,000	Capital	20,000
		Profit	2,000
Current assets	10,000	*less* Distribution	(2,000)
	20,000		20,000

Company B

Gross profit	5,000	
less Expenses	(3,000)	
less Depreciation	(1,000)	
Net profit	1,000	distributed

Balance sheet

Fixed assets	10,000	Capital	20,000
less Depreciation	(1,000)	Profit	1,000
Current assets	11,000	*less* Distribution	(1,000)
	20,000		20,000

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A well-run business has an overall cash plan for future months and years. Included in this is the expected need to replace assets. The assets that will be bought as replacements may be identical but more expensive, or they may be entirely different. It would be unusual, and probably commercially unwise, for a business to set aside amounts of money in liquid or time-matched investments in order to be prepared for the replacement of assets. These funds could be better used elsewhere in the business, and it is not until the time for replacement approaches that a good impression of the type and cost of replacement assets is obtainable.

Not for tax purposes

A major international difference is that depreciation in some countries has been closely linked with taxation. At first sight, this might seem inevitable in all countries. However, in Anglo-Saxon countries and in Denmark and the Netherlands, there is a long tradition of having differences between tax depreciation and accounting depreciation. At the extreme, in the United Kingdom, the depreciation expenses charged in the profit and loss account are not allowable at all as tax-deductible expenses for the calculation of taxable income. The tax calculations are done quite separately, and ‘capital allowances’, which amount to depreciation for tax purposes, are allowed instead. For example, for 2003/4, UK capital allowances are as shown in Table 9.4. In the United States and a few continental European countries, the separation between tax and accounting depreciation is not so clear, but differences are common (leading to deferred taxation; see chapter 12).

Table 9.4 Main UK capital allowances, 2003/4

Plant and machinery	25% p.a. on reducing balance
Industrial buildings	4% p.a. on cost
Commercial buildings	0%

However, in most continental European countries, there is a close relationship between tax and accounting depreciation. Technically, in the majority of those countries, the tax figures should be based on the accounting figures rather than the other way round. For example, in Germany, the *Steuerbilanz* should be based on the *Handelsbilanz*; this is the authoritative principle or the *Massgeblichkeitsprinzip* (as mentioned in chapter 5). In practice in these countries, since the tax rules will allow only certain maximum charges for tax purposes, the accounting depreciation charges are chosen to coincide with these maxima. So, the accounting figures end up being based on tax rules (the *umgekehrtes Massgeblichkeitsprinzip*, or reverse authoritative principle). These expenses are often larger than accountants might have chosen on grounds of fairness.

In many countries, governments offer accelerated tax depreciation in order to encourage investment in certain types of assets or certain regions. For example, this applies to the eastern *Länder* of Germany, to certain Greek islands and to the Highlands of Scotland. In Germany and countries like it (see chapter 5), such accelerated depreciation must be recorded in the appropriate financial statements in order to be allowable for tax purposes.

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However, under IFRS, it is clear that depreciation is an expense designed for financial reporting purposes rather than for tax calculations. If tax authorities wish to follow the accounting calculations, they may of course do so, but this should not be allowed to affect how enterprises measure depreciation.

9.5.3 Allocation methods

Activity 9.D The straight-line method of allocation was used earlier in the chapter for a basic illustration of depreciation. Referring to the earlier discussion of the definition of depreciation (see section 9.5.1), one can see that straight-line allocation is 'systematic' – but is it 'rational'?

Feedback In order to answer this question, it is necessary to recall why depreciation is being charged. Depreciation is a charge designed to recognize the loss of service that an asset has suffered in any year. As has been said, it is an example of the results of using the matching convention. Let us look at different types of assets with this in mind:

1. Leases, patents and some buildings can be said to require depreciation because of the effluxion of time. In this case, straight-line depreciation seems to be satisfactory.
2. Other assets have increasing repairs and maintenance. So, if straight-line depreciation is used, the total expense per year relating to an asset increases over its life. Therefore, if a reasonably constant total charge for an asset's services is to be charged in the income statement, a declining depreciation charge may be appropriate.
3. Some assets wear out in proportion to their use. Therefore, it may be appropriate to charge depreciation in line with this, at different amounts in different periods.

Declining charge

For type-2 assets in Activity 9.D, it may be rational to have a declining depreciation charge for some sorts of assets. There are several ways of producing this systematically. The reducing balance method (or the constant percentage on reducing balance method) is one of them. With 20 per cent depreciation, this would give a situation as shown in Table 9.5. So, the net book value (written-down value) at the end of the third year will be 5,120 and the charge in the third year will be 1,280.

Table 9.5 The reducing balance method

	Cost	10,000
Year 1	*less* 20% depreciation	2,000
	NBV	8,000
Year 2	*less* 20% depreciation	1,600
	NBV	6,400
Year 3	*less* 20% depreciation	1,280
	NBV	5,120

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How many years would it take to write down the asset to zero? The answer, inconveniently, is that it would take an infinite number of years. However, if there is a scrap value, the problem does not arise. If there is no scrap value, a small figure to which the asset will be written down may be chosen. The residual at that point will be an extra depreciation charge for the final year.

To find the appropriate percentage to use for a given net cost and a given useful life, a formula may be used:

$$r = 1 - \sqrt[n]{\frac{S}{K}},$$

where r is the depreciation rate, n is the life of the asset, S is the scrap value and K is the gross cost. This formula may be simply derived, as in Table 9.6, which shows that, at the end of an asset's life, $S = K(1 - r)^n$, which thus gives the above equation.

Table 9.6 The reducing balance formula

End of year	*NBV*	*Standardized form of NBV*
0	K	$K(1-r)^0$
1	$K - Kr$	$K(1-r)^1$
2	$(K - Kr) - (K - Kr)r$	$K(1-r)^2$
3	etc.	etc.

As an example, let us use the asset costing 10,000, which will have a scrap value of 3,000 and a life of seven years. Applying the above formula, we obtain:

$$r = 1 - \sqrt[7]{\frac{3,000}{10,000}} = 0.158, \text{ or } 15.8 \text{ per cent.}$$

The detailed results of depreciation year by year for our example are tabulated in Table 9.7, repeating the straight-line results for comparison. It can be seen that more depreciation is charged in the earlier years using the reducing balance method. This helps to stabilize the total charge (of depreciation plus maintenance) for the contribution of the machine to earning profits.

Table 9.7 Depreciation methods contrasted

	Straight line		*Reducing balance*	
Year	*Charge*	*NBV*	*Charge*	*NBV*
0	—	10,000	—	10,000
1	1,000	9,000	1,580	8,420
2	1,000	8,000	1,330	7,090
3	1,000	7,000	1,120	5,970
4	1,000	6,000	940	5,030
5	1,000	5,000	790	4,240
6	1,000	4,000	670	3,570
7	1,000	3,000	570[a]	3,000

[a]Adjusted for rounding differences.

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Another way of producing systematically declining charges for depreciation is to use the sum of digits method. For this, one merely adds up the digits of the number of years of useful life. For example, for a useful life of six years the sum of digits is 21 (i.e. 6 + 5 + 4 + 3 + 2 + 1). The charge for year 1 will be 6/21, that for year 2 will be 5/21 and so on.

Another method that can be used to obtain a declining charge is the double declining-balance method. Here, the straight-line depreciation rate is worked out and then doubled and applied on a reducing balance basis.

One of these three declining-charge methods might be appropriate for assets that are expected to have considerable repair and maintenance costs in later years. The total amount allocated will, of course, be the same in all these declining-charge methods and, for that matter, in the straight-line method. However, the amounts allocated to particular periods will vary with the method chosen.

It may be that the market value of most machines actually declines in a way that is more similar to the result of declining-charge depreciation than of straight-line depreciation. However, within the context of a historical cost system, this is not really an argument in favour of a declining-charge method, since the main aim is to get a fair yearly allocation of cost against profit over the whole life of the asset. Nevertheless, if the business is very uncertain about the useful life of the asset or the date of likely sale, there is an argument for rapid depreciation and for keeping the written-down value fairly close to the market value at all times rather than just at the estimated end of life. In these cases a declining-charge method may be more suitable.

Usage

Assets that come to the end of their useful lives as a result mainly of wearing out through use may more rationally be depreciated on the basis of usage. According to the usage method, if the asset concerned is expected to produce 100,000 units or to run for 20,000 hours, the depreciation charge for the year will be that proportion of the original cost that the usage of the year bears to the total expected usage. For example, in the case of a machine costing €20,000 that is expected to produce 100,000 units, the usage may turn out to be as given in Table 9.8.

Table 9.8 The usage method

Accounting year	*Units produced*	*Depreciation charge (€)*
1	15,000	3,000
2	35,000	7,000
3	20,000	4,000
4	20,000	4,000
5	10,000	2,000
	100,000	20,000

The revaluation method

Some assets are difficult to depreciate by using any of the above methods (namely straight-line, declining charge and usage). These assets are such things as tools,

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crates and livestock, for which it may be unnecessary to keep item-by-item records.

In the case of tools and crates, the assets may be capable of a long life, but in practice their lives are short because of damage, breakage, theft, loss and so on. In addition, their individual values are immaterial in the context of a whole company. Thus, it would be inefficient to record the purchase, the yearly depreciation charges, the disposal and adjustments to depreciation on disposal. In such instances, depreciation is charged using the revaluation method. This method involves valuing the set of similar assets at the beginning of the year, adding assets purchased and deducting a valuation of the set at the year end. This gives a measure of the using-up of the type of asset, which is charged to the profit and loss account as depreciation. The year-end valuation is recorded as a fixed asset in the balance sheet.

9.5.4 Methods used in practice

Straight-line depreciation is the most commonly used method in practice throughout Europe, particularly for buildings. Practice is not surveyed frequently, and Table 9.9 shows the most recently available widespread survey relating to the depreciation of plant and machinery. There seems to be no reason why the predominance of the straight-line method would have changed.

Table 9.9 Depreciation of plant and machinery

	Bel	*Den*	*Fra*	*Ger*	*Gre*	*Ire*	*Lux*	*Net*	*Swe*	*UK*	*Total*
Sample size	*50*	*32*	*40*	*49*	*30*	*38*	*12*	*40*	*9*	*50*	*350*
Evidence of charge to the income statement for depreciation of plant and machinery	45	32	32	46	30	33	11	32	9	47	317
Basis for depreciation[a]											
Amortization											
Straight line	30	29	28	36	30	29	11	30	9	47	279
Reducing balance	3	3	15	32	—	2	1	—	—	—	56
Other	4	—	1	6	—	2	—	2	—	—	15
Other	—	1	1	4	—	—	—	—	—	—	6
Basis not disclosed	8	—	2	—	—	—	—	—	—	—	10

[a] More than one answer possible.
Source: Adapted from FEE, *European Survey of Published Accounts 1991*, (London: Routledge, 1991).

Table 9.9 shows (for the latest year for which the data is available) the importance of the reducing balance method for plant and machinery in Germany and France. This is due largely to the close connection of tax and accounting. In these countries the reducing balance method is allowed for both accounting and tax, but depreciation has to be charged as an accounting expense in order to be tax-deductible. Companies generally want to charge depreciation as fast as possible for tax purposes, and using a reducing balance achieves this faster than straight-line depreciation. This can even lead to inconsistent accounting

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policies over the life of an asset, as illustrated for Germany in the box below. This is an example of how tax policies can adversely affect financial reporting.

Common German depreciation policy

Property, plant and equipment are stated at acquisition or production cost, less scheduled depreciation over their estimated useful lives. Special write-downs are also made in cases of expected permanent impairment of value, if the recovery of the book value can no longer be expected …

Movable fixed assets are mostly depreciated by the declining balance method, with a change to straight-line depreciation if this results in higher depreciation rates.

The average weighted periods of depreciation are as follows:

Building and structural installations	22 years
Industrial plant and machinery	9 years
Long-distance natural gas pipelines	25 years
Working and office equipment and other facilities	8 years

Source: Extract from Annual Report of BASF, 2000

Why it matters *Depreciation expenses are very much a matter of judgement. Preparers of financial statements may choose unreasonably rapid expensing (in order to reduce tax bills quickly) or unreasonably slow expensing (in order to make the assets and the profit look higher in early years). To take the example of unreasonably rapid expensing, this could make net assets significantly lower and, to start with, profits significantly lower. This would affect gearing and profit ratios, which might influence financial decisions.*

9.5.5 Practical difficulties

Assuming that depreciation is being calculated as an allocation of the historical cost of the asset, measurements or estimations will need to be made in the areas set out in this section.

Useful economic life

The causes of wearing out were mentioned earlier. IAS 16 gives some guidance on determining depreciable life (paragraph 44):

> The useful life of an asset is defined in terms of the asset's expected utility to the entity. The asset management policy of an entity may involve the disposal of assets after a specified time or after consumption of a certain proportion of the future economic benefits embodied in the asset. Therefore, the useful life of an asset may be shorter than its economic life.

This also makes it clear that 'useful life' relates to the use of the asset in the enterprise, not its total life, which may be longer.

The estimation of useful lives involves considerable judgement, which is likely to turn out to be wrong in any particular case. IAS 16 requires reviews of lives, followed by adjustments to depreciation to correct for errors in estimates. In

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practice, mis-estimation (or use of tax-based lives) often leads to the continued ownership and use by a business of fully depreciated assets. Strictly, the lack of any continued depreciation charge for them must mean that earlier charges were unfairly high and present charges (i.e. zero) are unfairly low.

The following is an example of the disclosures concerning the length of lives of assets by the Finnish company Nokia, which uses IFRS:

- Property, plant and equipment are stated at cost less accumulated depreciation.
- Depreciation is recorded on a straight-line basis over the expected useful lives of the assets, based on the following useful lives:
  - Buildings 20–40 years
  - Machinery and equipment 3–15 years
  - Land and water areas are not depreciated

For certain intangible assets, the estimation of the life of an asset may be particularly difficult. Unless the intangible depends on a fixed-term legal right, it may be difficult to observe the wearing-out of an intangible. Therefore, IAS 38 assumes that the life of an intangible will not normally exceed 20 years. If a longer period is used, then annual tests for impairment of value must be carried out (paragraph 99; and see section 9.6). The IASB issued proposals in 2002 to require annual impairment rather than amortization for intangibles without clear lives. Incidentally, the word *amortization* is sometimes used instead of 'depreciation', particularly in the context of intangible assets.

Residual value and disposal

If there is expected to be a residual value to an asset, the asset should gradually be written down to this rather than being written down to zero. That is, the *net* cost (i.e. cost less residual value) should be allocated over the useful life of the asset. In practice, estimates of residual value are difficult, and it is often assumed that there will be no residual value.

IAS 16 requires residual value to be calculated at the price levels ruling when the cost or value of the asset was determined. This often leads to disposal at above original estimate, and therefore to the recognition of gains, implying that there had been excess depreciation expenses. The proposed revision to IAS 16 suggests re-estimations of residual value, leading to the cessation of depreciation if price levels rise substantially.

Mid-year purchases

What depreciation should be charged on an asset bought part way through an accounting year? There are two possibilities: either the appropriate proportion (perhaps by month) of one year's depreciation is charged in the years of acquisition and disposal, or a whole year's depreciation is charged for only those assets that are on hand at the end of the year. As long as the second method is used consistently, it should only lead to significant distortion when the business has few assets or has just acquired or disposed of a very valuable asset.

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9.6 Impairment

As explained in the previous section, depreciation is designed to allocate the cost of a fixed asset against income over the asset's life. However, negative events sometimes occur unexpectedly and these may make this systematic allocation inadequate. There is then a danger that the carrying value of the asset (usually the depreciated cost) may overstate what the asset is worth to the business or to anybody else.

Activity 9.E What sort of events might happen to cause an impairment in the value of an asset below its depreciated cost?

Feedback An asset may, for example, be physically damaged or may suffer rapid economic obsolescence.

European laws based on the EU Fourth Directive try to cope with this by requiring companies to take account of any 'permanent diminution in value' of a fixed asset. However, this is a vague concept and would tend to lead companies to have frequent diminutions in Germany (where they are tax-deductible) and rare diminutions in the UK (where they are not).

IAS 36 tries to impose standard practice in this area by providing a method of measuring the size of impairment. If there is any indication of impairment of an asset, the enterprise must compare the asset's carrying value with what it is worth to the business: its 'recoverable amount'. Normally, for a fixed asset, the recoverable amount is the future benefits from using it. These can be valued by discounting the expected future net cash flows. This 'value in use' or 'economic value' involves considerable estimation, as mentioned in chapter 8. In practice, it may be impossible to make reasonable estimates for individual assets, and so impairment tests are carried out on groups of assets (called 'cash generating units') for which independent cash flows can be measured.

One of the cash flows that will come from an asset is that from its eventual disposal. However, sometimes the asset is to be sold immediately, so that the recoverable amount is the expected net selling price, which is defined in much the same way as the net realizable value. Presumably, the enterprise will only sell a fixed asset if the expected net selling price exceeds the expected value in use.

Figure 9.5 summarizes the resulting valuation method for a fixed asset. On the left-hand branch is the usual carrying amount before any impairment: depreciated cost. Usually, this depreciated cost will end up being the balance sheet value because it is lower than the recoverable amount (on the right-hand branch), which is itself the higher of two values. Normally, a fixed asset is not to be sold immediately, and so the value in use is higher. Consequently, the rule usually boils down to: the lower of depreciated cost and value in use. Nevertheless, the net selling price may be easier to determine and, as long as it is above depreciated cost, there is no impairment.

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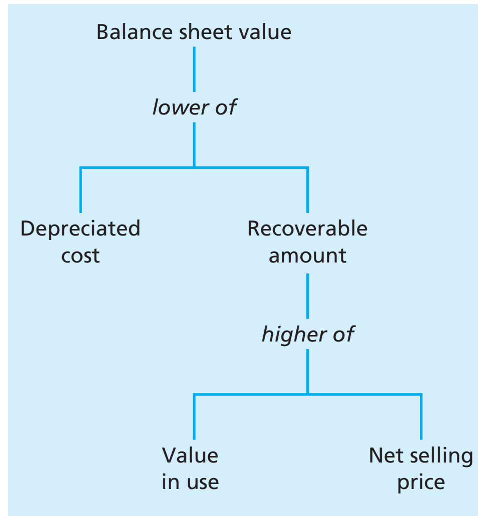
Figure 9.5 Determining carrying values



When there is an impairment, the difference between depreciated cost and the recoverable amount is an *impairment loss*, which is charged against income just as depreciation is.

Terminology

Activity 9.F If you speak a Latin-based language (such as French, Spanish, Italian, Portuguese or Romanian), how would you translate the French term *dépréciation* into English? If you speak a Germanic language (such as German, Dutch or a Scandinavian language), how would you translate the German term *Abschreibung* into English?

Feedback If you translated *dépréciation* as 'depreciation' or 'amortization', you would be making a common mistake. If you translated *Abschreibung* as 'depreciation', you would have missed half of its meaning. See the text below.

Having now examined depreciation and impairment, it is worth noting some potential international confusion in terminology. The English term 'depreciation' means the systematic allocation of cost, not 'loss of value'. The term 'amortization' has the same meaning, but tends to be used for intangible assets. By contrast, 'impairment' *is* about the loss of value.

The French term *amortissement* (and connected terms in other Latin languages) means depreciation/amortization, but the French term *dépréciation* does *not* mean depreciation but a loss of value or one-off write-down, of which an impairment is an example.

The German term *Abschreibung* (and connected terms in other Germanic languages) should not be translated as depreciation/amortization because it means any writing-down of values, including both depreciation and impairment. The relationship between the terms is illustrated in Figure 9.6.

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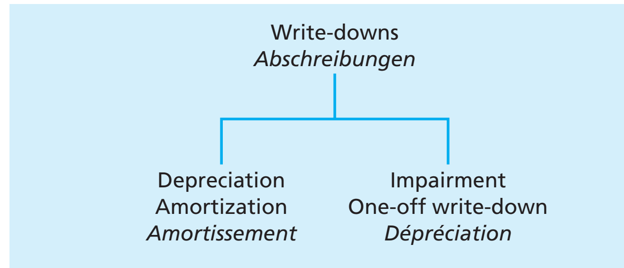
Figure 9.6 Terminology needs to be translated carefully



Why it matters *Depreciation can be a very large expense. For example, for the Dutch company Heineken, depreciation was equivalent to 46 per cent of the pre-tax profits in 2002, partly because it values at replacement cost (see section 8.6.1). However, as usual, the calculation of the depreciation expense relies on estimates of life and residual value. There are also choices about method. It would be easy to re-estimate Heineken's depreciation upwards by 10 per cent, in which case its profit would fall by 5 per cent.*

9.7 Measurement based on revaluation

9.7.1 An alternative to cost

This chapter has been written in the context of majority practice with respect to the measurement of tangible and intangible assets: historical cost. However, chapter 8 pointed out some disadvantages of this and some alternatives that might provide information of greater relevance.

The rules of several European countries, including the Netherlands, Denmark and the United Kingdom, allow revaluations above cost. In some countries, revaluations have occasionally been required by law; for example, in France in 1978, in Italy in 1991 and in Spain in 1996. In the United States and Germany, revaluation of tangible and intangible assets above cost is not allowed. Under IAS 16, the 'benchmark' treatment for property, plant and equipment is cost, but the 'allowed alternative' is to use fair values at each balance sheet date (paragraphs 28 and 29). There is similar permission in IAS 38 to revalue certain intangibles where there is a market in which to observe the value (paragraph 64).

Examples of revaluations are shown in Table 9.10. As may be seen, the revaluation comprises 11 per cent of the total fixed assets of the British company Marks & Spencer, and 5 per cent of the tangible fixed assets of the Spanish company CEPSA.

The reason for allowing revaluation of various assets is that a current valuation probably provides more relevant information. However, the exact rationale is unclear, as can be illustrated by looking at three practical problems:

- where to put the revaluation gain;
- whether to depreciate revalued assets;
- how to measure the gain on sale.

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Table 9.10 Revaluations for two European companies

	Marks & Spencer, 2003 (£m)
Fixed assets	3,467
including revaluation of	371
Net assets	3,038
	CEPSA, 1998 (Ptas, million)
Tangible fixed assets	281,324
including revaluation of	15,131
Net assets	260,092

9.7.2 Revaluation gains

Under IAS requirements, the revaluation gains are not recorded in the income statement, perhaps because they are not 'realized' – although this concept is also unclear as explained in chapter 8. Instead, the gains are recorded in the second performance statement, called the 'statement of changes in equity' by IAS 1 (see chapters 6 and 8). It is unclear whether these gains represent 'performance' or not.

An example may be helpful. Suppose that a company buys land for €500,000 cash at the beginning of 20X1 and adopts the revaluation approach. By the end of 20X1, the fair value of the land is €800,000. The resulting effects on the financial statements will be worked out as in Figure 9.7.

Figure 9.7 Revaluation of land

Effects on balance sheet as at 31.12.20X1

Land:	Cost	+500,000	Equity: Revaluation gain	+300,000
	Revaluation	+300,000		
	Fair value	=800,000		
	Cash	−500,000		

Income statement for 20X1

Statement of changes in equity for 20X1

Revaluation gain	+300,000

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9.7.3 Depreciation of revalued assets

Under IAS requirements, the revaluation does not lead to the conclusion that any previous depreciation was unnecessary. In fact, an upwards valuation leads to the need to charge *more* depreciation because a more valuable asset is being worn out. This suggests that the revaluation is really being seen as an updating of the cost of the asset. This would also explain why the revaluation gain was not treated as income. However, perhaps the revaluation should then have been based on replacement cost rather than on fair value (see section 8.3.3).

9.7.4 Gains on sale

Under IAS requirements, the gain on sale also treats the revalued amount of the asset as its new cost. That is:

gain on sale = proceeds of sale – net book value

To continue the example from before, suppose that the revalued land carried at €800,000 is sold in 20X2 for €600,000 cash because the previous estimate of fair value was wrong or because the value has since fallen. The resulting effects on the financial statements are shown in Figure 9.8. Clearly, the land falls to zero in the balance sheet as it has been sold, and cash rises by €600,000. This means that a loss of €200,000 is recorded in the income statement. In conclusion, the land was bought for €500,000 and sold for €600,000, and the only gain ever recorded in income is a loss of €200,000!

Figure 9.8 Sale of revalued land

Effects on balance sheet as at 31.12.20X2

Land:	Book value	800,000	Equity: Loss	–200,000
		–800,000		
		0		
	Cash	+600,000		

Income statement for 20X2

Loss	+200,000	

Statement of changes in equity for 20X2

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This seems rather strange, because it is clear that there is a realized gain of €100,000 which never appears in income. The previously recorded revaluation gain of €300,000 was not recorded in income and is still not. A further conclusion is that the income statement is not a statement of realized gains and losses – and we are not sure what it is. This reinforces the need, mentioned in chapter 8, to sort these problems out.

9.7.5 A mix of values

It should be noted that there is an interesting mixture of valuation methods in this chapter, which could all end up in the same balance sheet for different assets:

- cost (for some land);
- revaluation, substituted for cost (for other land);
- depreciated cost (for most other fixed assets);
- depreciated revaluation (for some other fixed assets);
- value in use (for most impaired fixed assets);
- net selling price (for impaired fixed assets to be sold soon).

Why it matters *The various 'values' of fixed assets are added together on a balance sheet to show such totals as 'net assets' and 'total assets'. These are used to assess the company's position and its performance (see chapter 7 and Part 3 of this book). If the 'values' are measured on several different bases, it is difficult to interpret the meaning of the totals.*

9.8 Investment properties

In most countries, properties held for rental or capital gain are treated in the same way as other properties. However, such 'investment properties' have been separately treated in the UK (under SSAP 19) and in a few other countries since the 1970s. These properties might be office blocks that the enterprise owns but does not occupy. The offices could be, for example, rented out under a five-year renewable contract.

The argument for a different treatment of such properties is that the really interesting fact about buildings in this category is their fair value, which can be determined with reasonable reliability because it depends upon the stream of rental income. It should be remembered that the objective for balance sheets is that they should be *relevant* and *reliable* (see chapter 3). Since, in this case, the fair value is more relevant than cost and is reasonably reliable, it should be used in the balance sheet. Its use in the UK and elsewhere led to an option in the appropriate IFRS, now to be found in IAS 40, *Investment Property*.

There are two further interesting features of the valuation option in IAS 40. First, since the properties are being held at fair value, the concept of depreciation makes no sense because depreciation is the allocation of cost. The revaluation at each balance sheet date takes account of the degree of wearing-out that has occurred in the period. In effect, both depreciation and impairment are being subsumed into continual revaluations.

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The second interesting feature of the valuation option in IAS 40 (but not in the UK's SSAP 19) is that the gains and losses caused by constant revaluation are treated as part of the performance of the company and are taken to the income statement.

It should be noted that there are therefore two major differences between the IAS 40 value option for investment property and the IAS 16 value option for other property. Under IAS 16, as explained earlier, properties can be revalued upwards but the gain does not go to income and the depreciation expense is still charged – indeed, charged at a higher level.

We can now add another valuation method to the list of those used under IFRS requirements for fixed assets, as shown earlier at the end of section 9.7: investment properties can be valued at undepreciated revalued amounts even though they wear out, unlike land. This is a good illustration of the fact that conventional accounting under the IFRS regime and in any national system contains a 'mixed model' of costs and values. IFRS requires or allows more use of values than most systems, and it is moving further in that direction. The present position involves a mixture that is difficult to justify without knowing that we are on the move from one system to another and that we are trying to balance relevance against reliability.

SUMMARY

- This chapter concerns tangible fixed assets (property, plant and equipment) and intangible fixed assets. If such items meet the definition of 'asset', they should be recognized in the balance sheet if the benefits are probable and if the asset can be measured reliably. This cuts out goodwill, research, brands or customer lists if they were internally generated.
- If assets are bought individually or as part of a going concern, they should be recognized separately if possible.
- Assets do not have to be owned; control of the resources is what matters. Consequently, certain leased assets are treated as finance leases and capitalized. The present cut-off between finance and operating leases seems difficult to defend.
- The cost of assets with limited useful lives must be depreciated in a systematic and rational way against income over their lives. Depreciation is not designed as a technique for valuation or to help replacement or to calculate taxable income.
- Allocation methods include straight-line, reducing balance, sum of digits and usage. In practice, the straight-line method is the most common, except where reducing balance is used to accelerate tax deductions.
- There is considerable judgement needed in the estimation of useful lives and residual value.
- Sometimes assets suffer impairments of value that are not captured by systematic depreciation. When this occurs, the assets are usually written down to their value in use, based on discounted cash flows.
- Although most assets are valued at cost, revaluation is allowed in some countries and under the IFRS regime. The revaluations are treated as a new cost for the calculation of depreciation and any gain on sale.
- Investment properties can be treated on a valuation basis, with gains going to income and with no explicit depreciation.

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References and research

This note refers to a few examples of English-language publications that are of relevance to the topics of this chapter. The IASB documents of greatest relevance are:

- IAS 16 (revised 2003), *Property, Plant and Equipment*.
- IAS 17 (revised 2003), *Leases*.
- IAS 20 (reformatted 1994), *Accounting for Government Grants*.
- IAS 23 (revised 1993), *Borrowing Costs*.
- IAS 36 (1998), *Impairment of Assets*.
- IAS 38 (1998), *Intangible Assets*.
- IAS 40 (2000), *Investment Property*.

Research on the issues of this chapter can be found in three articles:

- L. Collins, 'Revaluation of assets in France: the interaction between professional practice, theory and political necessity', *European Accounting Review*, Vol. 3, No. 1, 1994.
- N. Garrod and I. Sieringhaus, 'European Union accounting harmonization: the case of leased assets in the United Kingdom and Germany', *European Accounting Review*, Vol. 4, No. 1, 1995.
- A. Burlaud, M. Messina and P. Walton, 'Depreciation: concepts and practices in France and the UK', *European Accounting Review*, Vol. 5, No. 2, 1996.

Because accounting for fixed assets is closely linked to tax rules in several countries, it will be helpful to look at a number of articles on the accounting–tax link in *European Accounting Review*, Vol. 5, Supplement, 1996.

Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

9.1 A tractor held by a farm implement company for sale to farmers is a fixed asset.

(a) True.
(b) False.

9.2 Which of the following is properly classified as an intangible asset?

(a) Debtors.
(b) Accumulated depreciation.
(c) Land held for future use.
(d) Trademarks.

9.3 Under IAS, items should be put in a balance sheet under the heading 'assets' when:

(a) They represent expenditures which have not yet been charged against income.
(b) They meet the definition of 'asset'.
(c) They meet the definition of 'asset', the benefits from them are probable, and the cost or value can be measured reliably.
(d) They will bring future benefit to the enterprise.

9.4 Under EU rules, a fixed asset is one that:

(a) Could not be sold without loss.
(b) Does not move.

(c) Is not expected to be turned into cash within one year.
(d) Is intended for continuing use in the business.

9.5 A company might pay more for a set of assets than the total of their apparent values as individual units because:

(a) It expects future profits.
(b) It believes that it is buying unidentified intangible assets such as customer loyalty.
(c) It has a management team that is very keen on expansion and is prepared to pay too much.
(d) Any of the above.

9.6 In practice, leases are *not* generally capitalized under the rules of the following countries or standard setters:

(a) US and Canada.
(b) IASB.
(c) Germany and Italy.
(d) UK and Ireland.

9.7 Depreciation refers to the periodic allocation of the net cost of a fixed asset over its useful life.

(a) True.
(b) False.

9.8 The recognition of finance leases creates which of the following effects in financial statements of a lessee?

(a) Net income always rises.
(b) Net income always falls.
(c) Net worth always falls.
(d) Total assets always rise.

9.9 The net book value of a machine usually equals its market value.

(a) True.
(b) False.

9.10 Accelerated methods of depreciation result in lower net income in the last years of an asset's life than does the straight-line method.

(a) True.
(b) False.

9.11 Which of the following would *not* be a basis for estimating the useful life of a piece of equipment?

(a) Years of service.
(b) Weight.
(c) Potential production in units.
(d) Hours of service.

9.12 All of the following are needed for the computation of depreciation *except*:

(a) Expected disposal date.
(b) Cost.
(c) Residual value.
(d) Estimated total useful life to the present and future owners.

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9.13 If an asset were to cost €24,000 and have a residual value of €3,000 and a useful life of six years, the depreciation in the *second* year, using the sum-of-the-years-digits method, would be:

(a) €6,857.
(b) €6,000.
(c) €5,714.
(d) €5,000.

9.14 Using the figures of Question 9.13, which of the following methods would result in the least depreciation in the first year?

(a) Straight-line.
(b) Sum-of-the-years-digits.
(c) Declining-balance.
(d) Cannot tell from data given.

9.15 The sale of equipment costing €8,000, with accumulated depreciation of €6,700 and sale price of €2,000, would result in a:

(a) Gain of €2,000.
(b) Gain of €700.
(c) Loss of €700.
(d) Loss of €600.

9.16 Harlem Corporation purchased a piece of equipment on 1 June 20X1 for €15,000. The equipment has an estimated life of ten years or €25,000 units of production and an estimated residual value of €2,500. The amount of depreciation to be recorded for the year 20X1, using the straight-line method of calculating depreciation and assuming a 31 December year-end, is:

(a) €1,500.
(b) €875.
(c) €729.
(d) None of the above.

9.17 According to the information given in Question 9.16, the amount of depreciation to be recorded for the year 20X1, using the units of production method and assuming that 3,500 units were produced, is:

(a) €3,660.
(b) €4,380.
(c) €2,129.
(d) €1,750.

9.18 According to the information given in Question 9.16, except that the machine was bought on 1 January 20X1, the amount of depreciation to be recorded for the year, using the sum-of-the-year-digits method, is:

(a) €2,273.
(b) €1,326.
(c) €1,591.
(d) None of the above.

9.19 Under IFRS arrangements, impairment of a machine is usually calculated by comparing depreciated cost with:

(a) Replacement cost.
(b) Value in use.

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(c) Net selling price.
(d) Inflation-adjusted cost.

9.20 Revaluation of tangible fixed assets is *not* allowed under the rules of:

(a) United Kingdom.
(b) IFRS.
(c) Germany.
(d) Netherlands.

9.21 In most countries, the basis of fixed asset valuation (after adjusting for depreciation where appropriate) is normally:

(a) The selling price of the asset.
(b) The original purchase cost.
(c) The current purchase cost.
(d) The future net benefits.

Exercises

Feedback on the first two of these exercises is given in Appendix E.

9.1 What are the essential criteria used to distinguish a fixed asset from other assets?

9.2 'What is relevant to investors is information about the future. Since this is not reliable, financial accountants give them irrelevant information instead.' Discuss.

9.3 Costa Co. uses three identical pieces of machinery in its factory. The cash price of these machines is €8,000 each and their estimated lives four years. These were all brought into use on the same date by the following means:

(a) machine 1 was rented from Brava Co. at a cost of €250 per month payable in advance and terminable at any time by either party;
(b) machine 2 was rented from Blanca Co. at a cost of eight half-yearly payments in advance at €1,500;
(c) machine 3 was rented from Sol Co. at a cost of six half-yearly payments in advance at €1,500.

Are the above machines rented by operating lease or by finance lease according to the current IASC rules?

9.4 For each of machines 1, 2 and 3 in Exercise 9.3, outline the effect on reported profits, and on the balance sheet, as included in the published financial statements.

9.5 'The idea of "substance over form" supports the recording of a finance lease as an asset, even though there is no legal ownership. This suggests that the idea of substance over form is a dangerous one.' Discuss.

9.6 Does research expenditure give rise to an asset? Explain your answer.

9.7 In chapter 3 of this book, the following question was asked as Question 3.7:

> On 21 December 20X1, your client paid €10,000 for an advertising campaign. The advertisements will be heard on local radio stations between 1 January and 31 January 20X2. Your client believes that, as a result, sales will increase by 60 per cent in 20X2 (over 20X1 levels) and by 40 per cent in 20X3 (over 20X1 levels). There will be no further benefits.

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Write a memorandum to your client explaining your views on how this item should be treated in the year-end financial statements for the three years. Your answer should include explicit reference to relevant traditional accounting conventions, and to the requirements of users of published financial statements.

Now that we have investigated the relevant issues in more detail, what is your opinion of the answer? If you remember how you answered before, you may like to compare your answers.

9.8 A company borrows money at 10 per cent interest in order to finance the building of a new factory. Suggest arguments for and against the proposition that the interest costs should be capitalized and regarded as part of the 'cost' of the factory. Which set of arguments do you prefer?

9.9 Provide in your own words:

(a) an explanation of what depreciation is;
(b) an explanation of the net book value (NBV) of a partially depreciated fixed asset.

9.10 The payments set out in Table 9.11 have been made during the year in relation to a fixed asset bought at the beginning of the year:

Table 9.11 Example fixed asset payments

Item	€	€
Cost as in supplier's list	12,000	
Less agreed discount	1,000	
		11,000
Delivery charge		100
Erection charge		200
Maintenance charge		400
Additional component to increase capacity		500
Replacement parts		600

What cost figure should be used as the basis for the depreciation charge for the year, and why?

9.11 Outline three different depreciation methods, and appraise them in the context of the definition and objectives of depreciation.

9.12 The following actual and estimated figures are available:

Cost	€12,000
Useful life	4 years
Scrap value	€2,000

Based on these figures, evaluate the following:

(a) Calculate annual depreciation under the straight-line method.
(b) Calculate the depreciation charge for each of the four years under the reducing balance method using a depreciation percentage of 40 per cent.
(c) If the estimated scrap value turns out to be correct and the asset is sold on the first day of year 5, list and contrast the effect on reported profit for each of the five years under each method.

9.13 Is depreciation either too subjective, or too arbitrary, to be useful?

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10

Inventories

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- explain the nature of inventory, and outline methods of its physical quantification;
- define, calculate and appraise a variety of methods of valuing inventory under historical cost;
- outline regulatory requirements for inventory valuation;
- outline output value methods for inventory valuation;
- outline the problems of evaluating long-term construction contracts, and describe, simply illustrate and appraise the completed contract and percentage of completion methods of their evaluation.

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10.1 Introduction

This chapter considers issues relating to the counting and valuation of inventories. Inventories are current assets, tangible in nature, that are, or will become part of, the product to be sold by an enterprise. As discussed in Part 1 of this book, conventional accounting is generally based on the recording of transactions and on revenue and expense calculation, rather than on valuations. Consequently, when calculating the depreciation of assets as analyzed in the previous chapter, greater attention is paid to the meaning of the depreciation charge in the income statement than to the resulting effects on the written-down value of the depreciated asset in the balance sheet. The written-down value is not supposed to represent the sale value of the asset at the balance sheet date.

Like depreciation, the valuation of inventory also directly affects the income statement and the balance sheet. As a current asset, and consistent also with IASB emphasis on asset/liability definition and measurement rather than on expense/revenue, balance sheet considerations for inventory are important in their own right. Inventory valuation also affects the apparent liquidity of the company, the figure for inventory being included in a number of the ratios discussed in chapter 7.

It should be clear that the valuation of inventory on hand at the end of an accounting period directly affects the profit figure. For example, for a retail company with no opening inventory, the gross profit, i.e. the margin on sales before charging operating expenses, might be:

	Sales for the period	1,000
–	Purchases for the period	– 800
+	Closing inventory at the end of period	+ 50
=	Gross profit	= 250

This can be rearranged as:

Sales for the period		1,000
Purchases	(800)	
Closing inventory	50	
Cost of sales		(750)
Gross profit		250

Purchases of materials in the period are all treated initially as expenses in this example. However, the materials are not all used up in the accounting period; so, in order to take account of the existence of closing inventory, it is necessary to make an adjustment that reduces the expenses. Although the total profit of all accounting periods is not affected by the valuation of inventory (because one year's closing inventory is the next year's opening inventory), the profit of any individual year *is* affected.

Since the concern is with finding a fair figure for profit for the year, there must be an attempt to match the charge for inventory used against the sales that relate to it. There are many ways of valuing the remaining inventory, some of which cause fairer charges for the inventory used than others. Any overvaluation of closing inventory by 1 euro leads to an overstatement of profit by 1 euro in the

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year in question. However, this would also make next year's opening inventory too large, and therefore next year's profit too small.

Activity 10.A Table 10.1 gives summarized gross profit calculations for two years for the same enterprise.

Table 10.1 Gross profit calculations

	Year 1		Year 2	
Sales (revenue)		2,000		3,000
Opening inventory	800		950	
Purchases	1,600		2,100	
	2,400		3,050	
less Closing inventory	950		1,150	
Cost of sales (expense)		1,450		1,900
Gross profit		550		1,100

After the end of year 2, it is discovered that an error was made in the inventory valuation at the end of year 1, and the figure of 950 is revised to 850. Redraft Table 10.1 and comment on the results.

Feedback The revised figures should be as shown in Table 10.2.

Table 10.2 Revised gross profit calculations

	Year 1		Year 2	
Sales (revenue)		2,000		3,000
Opening inventory	800		850	
Purchases	1,600		2,100	
	2,400		2,950	
less Closing inventory	850		1,150	
Cost of sales (expense)		1,550		1,800
Gross profit		450		1,200

This demonstrates that the total result over the two years, i.e. 1,650 gross profit, is the same, whatever figure for year 1 closing inventory is used.

Why it matters *Activity 10.A does not imply that inventory valuation is unimportant. It affects ratios and interpretation of the year 1 position and results, as already stated. Furthermore, it affects the apparent trend of performance over the years. Table 10.1 suggested that gross profit had doubled between the years; Table 10.2 shows that it nearly trebled.*

Inventory is usually split into categories, typically:

- raw materials;
- work-in-progress;
- finished goods.

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A manufacturing business may have all three types, whereas a retail business may have only the last in the list.

A language point is worth making here. The word 'inventory' is used in North America and some other English-speaking areas of the world. It is also the word found in IASB statements. It is used in many translated annual reports of continental European companies, which tend to use a mid-Atlantic version of English. However, in the United Kingdom and Ireland and some other English-speaking countries, the word 'stock' is used instead. This can lead to particular confusion, because 'stock' in US terminology means 'share'. A short comparative glossary for this point is shown as Table 10.3.

Table 10.3 Comparative usage of 'stock'

United States	*United Kingdom*
Inventory	Stock
Work-in-process	Work-in-progress
Stock	Shares
Common stock	Ordinary shares

10.2 Counting inventory

Before *valuing* an inventory it is necessary to know how much there is. It is also useful to know what type of inventories there are. Consider a simple case where a business owns finished goods only, because it runs a wholesale warehouse. There are several ways of estimating the quantity of inventory on hand at a year end, and two of them are considered in this section.

10.2.1 Periodic counts

With *periodic counting*, warehouse staff, perhaps assisted by administrative staff, physically count and record all items of inventory on the premises. The auditors will probably wish to advise on procedures, attend the count and check the results for a few types of inventory. Adjustments have to be made for goods on the premises that do not belong to the firm and for goods off the premises that do. Also, there will be adjustments for inventory movements if the actual count is done on a day that is not the accounting year end, perhaps because a weekend is more convenient.

10.2.2 Perpetual inventory

When using the *perpetual inventory* method, a record is kept item by item of all inventory movements as they occur. Therefore, a figure for the amount of inventory of each type on hand at any moment should be easy to calculate. This is supplemented by occasional counts of selected items to see whether the inventory records are accurate. This avoids a massive and disruptive effort at the year end.

In practice, many inventory control systems are run by computers, which record sales and purchases and produce invoices and lists of debtors. They can

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also report current inventory figures, slow-moving lines, re-order possibilities, and so on. The running of a perpetual inventory is much easier in these circumstances.

Comparing these two methods, we can see it is clear that perpetual inventory will discover pilferage more quickly and help in signalling that a re-order of inventory is necessary. Note that the periodic count gives a figure for usage during the year by residual, which obscures any pilferage and breakages. On the other hand, the perpetual inventory method counts up usage during the year but leaves closing inventory as a residual figure. The physical figures must always be those used for profit measurements, if available. The accounting records must be adjusted to the actual physical inventory in cases of discrepancy.

10.3 Valuation of inventory at historical cost

Like any other asset, inventory can in principle be valued either on an input value basis or an output value basis, as outlined in chapter 8. The most common basis for the valuation of inventory is the input basis of historical cost, which we consider first. Once an enterprise has established the quantity of inventory, the key problem is how to evaluate the 'cost' of an item at each and every stage in the production process, how to determine the cost of items sold, and, therefore, the cost of items not yet sold (i.e. still in inventory). The first major difficulty is the appropriate allocation of overhead costs (i.e. indirect costs) to particular items or products. The principle is that the cost of inventories should comprise all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

A moment's reflection will make it clear that there are practical problems here. The inclusion of 'direct' items should present no difficulties, because figures can be related to particular inventory 'directly' by definition. But overhead allocation necessarily introduces assumptions and approximations: decisions have to be made about which overheads are 'attributable' to the present condition and location of an item of inventory. So, for any item of inventory that is not still in its original purchased state, it is a problem to determine the cost of a unit, or even of a batch. Methods in common use include job, process, batch and standard costing. For financial accounting purposes, cost should include the appropriate proportion of production overheads (as illustrated below). Other overheads (e.g. administration and selling) should *not* be included, according to the relevant International Accounting Standard (IAS 2), but can be included in some countries.

Let us look at a simple example of overhead absorption:

Direct cost:	Labour	€3 per unit
	Materials	€2 per unit
Direct manufacturing overheads (specific supervisors and machines)		€40,000
Indirect manufacturing overheads (rates, factory managers, etc.)		€60,000
Administrative overheads of the rest of the company		€80,000
Selling overheads		€20,000

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If the year's production were 20,000 units and this type of production used one-third of the factory, the cost per unit for goods that had fully passed through production would be €8; that is:

Direct costs	€5	
Direct manufacturing overheads	€2	(i.e. €40,000 ÷ 20,000)
Indirect manufacturing overheads	€1	(i.e. €60,000 × one-third ÷ 20,000)
Other overheads	nil	
Total	€8	

This 'cost' of €8 is used for financial accounting purposes. For management accounting, other methods of calculating costs might be used, e.g. concentrating on direct costs only, or including all overheads. Activity-based costing (ABC) does not alter the principle of this issue concerning treatment of overheads, but it will tend to lead to a higher proportion of direct overheads and a lower proportion of indirect ones.

10.4 Inventory flow

A difficulty will arise when we have to determine the cost of particular remaining or sold units, when several identical items have been purchased or made at different times and therefore at different unit costs.

Consider the following transactions:

Purchases:	January	10 units at €25 each
	February	15 units at €30 each
	April	20 units at €35 each
Sales:	March	15 units at €50 each
	May	18 units at €60 each

How do we calculate inventory, cost of sales, and gross profit? There are several ways of doing this, based on different assumptions as to which unit has been sold, or which unit is deemed to have been sold. Five possibilities are discussed below: unit cost, first in first out, last in first out, weighted average and base inventory.

10.4.1 Unit cost

Here, we can identify the actual physical units that have moved in or out. Each unit must be individually distinguishable, e.g. by serial number. In these circumstances – acknowledged as impractical in many cases – we simply add up the recorded costs of those units sold to give cost of sales, and of those units left to give inventory. This needs no detailed illustration. However, there are two problems with valuing using this assumption. First, many costs are overhead costs; that is, the costs are incurred for the processing of not only all these units but perhaps other types of units as well, and they are therefore difficult to allocate to individual types of inventory let alone to individual units. Second, profit can be manipulated by choosing which out of several similar units will be sold; if it were wished to defer some profit until next year, the most expensive units (perhaps the most recently produced ones) should be sold.

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10.4.2 First in, first out (FIFO)

As implied in section 10.4.1 above, in many cases it is inconvenient or impossible to identify the units being sold, and so some assumption is necessary. Under FIFO, it is assumed that the units moving out are the ones that have been in the longest (i.e. came in first). The units remaining will therefore be regarded as representing the latest units purchased.

Activity 10.B

Calculate the cost of sales and gross profit, based on a FIFO inventory cost assumption, from the data given at the start of section 10.4 concerning purchases and sales from January to May. Assume that a perpetual inventory system is used, i.e. with continuous recalculation.

Feedback

Table 10.4 Calculating cost of sales (FIFO method)

	Inventory quantity			*Value*	*Cost of sales*
January	+ 10	at €25	= +	€250	
February	+ 15	at €30	= +	450	
February end total	25			700	
March	− 10	at €25 (Jan.)	= −	250	
	− 5	at €30 (Feb.)	= −	150	400
March end total	10	at €30	=	300	
April	+ 20	at €35	= +	700	
April end total	30			1,000	
May	− 10	at €30 (Feb.)	= −	300	
	− 8	at €35 (Apr.)	= −	280	580
May end total	12	at €35		420	
					€980

The cost of sales (see Table 10.4) = €980. The value of sales is €750 + €1,080 = €1,830. Purchases amounts to € (250 + 450 + 700) = €1,400. This gives:

Sales		€1,830
Purchases	€1,400	
Closing inventory	€420	
Cost of sales		€980
Gross profit		€850

10.4.3 Last in, first out (LIFO)

Here we reverse the FIFO assumption. We act as if the units moving out are the ones that came in most recently. The units remaining will therefore be regarded as representing the earliest units purchased. It is important to stress that the accounting assumption need not be related to the actual physical movement of the inventory.

Activity 10.C

Calculate the cost of sales and gross profit, based on LIFO inventory cost assumption, using the data given earlier.

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Feedback Table 10.5 Calculating cost of sales (LIFO method)

	Inventory quantity			Value	Cost of sales
January	+ 10	at €25	= +	€250	
February	+ 15	at €30	= +	450	
February end total	25			700	
March	− 15	at €30 (Feb.)	= −	450	450
March end total	10		=	250	
April	+ 20	at €35	= +	700	
April end total	30			950	
May	− 18	at €35 (Apr.)	= −	630	630
May end total	2	at €35			
	10	at €25		320	€1,080

This gives:

Sales		1,830
Purchases	1,400	
Closing inventory	320	
Cost of sales (Table 10.5)		1,080
Gross profit		€750

10.4.4 Weighted average

Here we apply the average cost, weighted according to the different proportions at the different cost levels, to the items in inventory.

Activity 10.D Calculate the cost of sales and gross profit, based on the weighted average inventory cost assumption, using the data given earlier in the section.

Feedback Table 10.6 Calculating cost of sales (weighted average method)

	Inventory quantity			Value	Cost of sales
January	+ 10	at €25	= +	€250	
February	+ 15	at €30	= +	450	
February end total	25	at €28[a]		700	
March	− 15	at €28	= −	420	420
March end total	10	at €28	=	280	
April	+ 20	at €35	= +	700	
April end total	30	at €32[b]		980	
May	− 18	at €32	= −	588	588
May end total	12	at €32		392	
					€1,008

[a] Working: $\frac{(10 \times 25) + (15 \times 30)}{(10 + 15)} = 28$

[b] Working: $\frac{(10 \times 28) + (20 \times 35)}{(10 + 20)} = 32$

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Calculations similar to those in Activities 10.B and 10.C give:

Sales		1,830
Purchases	1,400	
Closing inventory	392	
Cost of sales (Table 10.6)		1,008
Gross profit		€822

The illustration above shows the fully worked-out method, involving continuous calculations. In practice, a figure for average cost of purchases is often used, particularly in manual systems, rather than one for an average cost of inventory. In other words, the average cost of purchases over a whole period is used as an approximation to the true weighted average. This approximation reduces the need for calculation to a periodic, maybe even annual, requirement.

10.4.5 Base inventory

This approach is based on the argument that a certain minimum level of inventory is necessary in order to remain in business at all. Thus, it can be argued that some of the inventory, viewed in the aggregate, is not really available for sale and should therefore be regarded as a non-current asset. This minimum level, defined by management, remains at its original cost, and the remainder of the inventory above this level is treated, as inventory, by one of the other methods. In our example, the minimum level might be ten units.

Activity 10.E Calculate the cost of sales and gross profit, based on a base minimum inventory level of ten units and using FIFO.

Feedback January purchase of base inventory 10 at €25 = €250.

Table 10.7 Calculating the cost of sales (FIFO method) after base inventory

	Inventory quantity	*Value*	*Cost of sales*
February	+ 15 at €30	= + €450	
March	− 15 at €30	= − 450	450
March end total	0	0	
April	+ 20 at €35	= + 700	
April end total	20	= 700	
May	− 18 at €35	= − 630	630
May end total	2 at €35	= 70	
			€1,080

This gives:

Sales		1,830
Purchases	1,150	
Closing inventory	70	
Cost of sales (Table 10.7)		1,080
Gross profit		€750

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Why it matters *The summarized income statements, and closing inventory figures, from Activities 10.B to 10.E are given in columnar form in Table 10.8.*

Table 10.8 Summarized results of Activities 10.B to 10.E

		FIFO €		*LIFO* €		*Wt.av.* €		*Base inventory* €
Sales		1,830		1,830		1,830		1,830
Purchases	1,400		1,400		1,400		1,150	
Closing inventory	420		320		392		70	
Cost of sales		980		1,080		1,008		1,080
Gross profit		850		750		822		750

As can be seen from Table 10.8, the reported gross profit in our example firm, and therefore obviously the net profit, differs according to the cost assumption policy that has been chosen. The closing inventory figure (including both parts in the case of the base inventory method) also varies by a corresponding amount. These differences directly affect the reported impression of the year's activities. They also affect a number of ratios discussed in chapter 7 and in Part 3.

It is important to remember that these differences arise solely because of changes in the accounting assumptions, and they do not reflect any differences in the underlying reality. ***All*** *of these possible results are derived by a strict application of the historical cost principle.*

It should also be remembered, however, that last year's closing inventory is this year's opening inventory. In the second year, it is the difference between the opening inventory of year 2 and the closing inventory of year 2 that is deducted from sales to affect the gross profit. Consistent differences between differently calculated inventory figures will cancel out when year-end balance sheet figures are being compared.

Activity 10.F The most commonly considered inventory cost assumptions are the FIFO, LIFO, and weighted average methods. Which seems preferable?

Feedback Inevitably, the response to this question is influenced by the chosen criteria. One rational criterion would be the suggestion that up-to-date historical costs are better than out-of-date historical costs. From a profit calculation perspective, LIFO matches more recent costs against current revenue levels, whereas FIFO matches older costs against current revenue levels. This sounds like an argument in favour of LIFO. From a balance sheet perspective, however, FIFO tends to leave the latest historical cost figures in the balance sheet, i.e. the closing inventory is more likely to be based on historical costs dated close to the balance sheet date under FIFO than under other methods. This sounds like an argument for FIFO.

Weighted average is essentially a compromise between FIFO and LIFO. It is therefore less 'better' in one sense, and less 'worse' in another.

An alternative criterion might be the prudence convention. One might wish to argue that the preferred basis is that which gives a more conservative outcome. In times of rising cost levels, this would generally suggest LIFO, as Table 10.8 demonstrates,

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whereas in times of falling cost levels it would suggest the use of FIFO. As earlier chapters have indicated, different countries have traditionally had different views on the relative importance of matching and prudence. Of course, if tax bills are based on the method chosen for financial reporting, then LIFO would be preferred if prices are rising.

10.5 Other cost methods

10.5.1 Standard cost

For the purposes of cost accounting, a business may have established a series of standard costs for its inventories at various levels of completion. These costs may be used for inventory valuation. Further reference to standard costs is left to books on cost accounting.

10.5.2 Retail inventory and gross profit margin

These methods are used to overcome the practical problems in large shops of counting and valuing great numbers of different items. By using these methods, the inventory is counted on a periodic rather than a perpetual basis, and its value at selling prices is worked out. To find a value using any of the other methods discussed so far would be extremely difficult. Clearly, though, to value inventory at selling prices would be to take profit before sale. In order to avoid this, ratios of cost to price are worked out item by item or class by class; and these are applied to the inventories to reduce them to cost. Since current prices and current costs will be used, there will be a result similar to FIFO. This is called the *retail inventory method*.

An alternative method uses a gross profit margin, which is worked out using experience of prior years. Here, the valuation is even quicker, because the inventory cost is worked out by taking the goods bought *plus* opening inventory at cost, *less* the goods sold at selling price reduced to cost by application of the gross profit margin. So, no count is made. Consequently, this method should only be used as a check on other methods or when no other method is possible (e.g. to value inventory destroyed in a warehouse fire).

10.6 Valuation of inventory using output values

The use of output values would rely on the proposition that the value of the inventory to the firm is the future receipts that will arise from it. There are several ways that this output value could be measured:

1. *Discounted money receipts* can be used when there is a definite amount and time of receipt. This will seldom be the case except for contracts of supply.
2. *Current selling prices* may be used when there is a definite price and no significant selling costs or delays. For example, inventories of gold may be valued in this way.

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3. *Net realizable value* is the estimated current selling price in the ordinary course of business, less costs of completion and less costs to be incurred in marketing, distributing and selling but without deduction for general administration or profit.

There seem to be grounds for using net realizable value when sales prices and other costs are known, particularly for inventories in an advanced state of completion. It can be argued that, if 90 per cent of the work has been done, then to take all the profit before sale is better ('fairer') than taking none. However, conventional accounting is not disposed towards a consistent use of this valuation method, because profit would then be taken before the inventory was sold.

10.7 Practice

The usual policy followed for the valuation of inventory is to measure it at the lower of historical cost and net realizable value. Cost, as discussed earlier, comprises all costs necessarily incurred in bringing the inventories to their present location and condition. Net realizable value is the estimated selling price in the ordinary course of business, less any estimated costs of completion and estimated costs necessary to make the sale.

IAS 2, *Inventories*, applies to inventories measured on the historical cost basis. It requires that inventories are recorded at the lower of cost and net realizable value on an item-by-item basis. So, for each separate item we need to determine both cost, under one of the methods discussed earlier, and net realizable value as defined above. The EU Fourth Directive requires the same, and therefore so do laws in countries within the European Union.

The significance of the 'separate items' point should be noted. Suppose there are three products, A, B and C, with values as shown in Table 10.9. The value for inventory in the accounts is €30, not the lower of €33 and €36. This is, of course, a classic example of the prudence convention.

Table 10.9 Lower of cost and net realizable value (NRV)

Product	*Cost* (€)	*NRV* (€)	*Lower* (€)
A	10	12	10
B	11	15	11
C	12	9	9
Total	33	36	30

There has been considerable debate over the last two decades or so as to whether restrictions should be placed on the choice of the inventory cost assumption method made by enterprises. The EU Fourth Directive allows 'weighted average prices, the first in first out (FIFO) method, the last in first out (LIFO) method, or some similar method'. IAS 2 (as revised in 1993) has its 'benchmark' requirement, where specific identification is not applicable, as 'by using the first in first out or weighted average cost formulas' but accepts LIFO as an 'allowed alternative'. However, IAS 2 is being amended to delete LIFO with effect from 1 January 2005.

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LIFO is not usually allowed in several countries (e.g. France and the United Kingdom), but is allowed (and found) in Germany, Italy and the Netherlands, for example. Moreover, it is the predominant method in the United States. This is because it is allowed for tax purposes there and, as noted earlier, tends to show lower profits than FIFO or weighted average.

10.8 Current replacement cost

Historical cost is undoubtedly the most often used type of input valuation basis. However, an alternative possibility is to use the current input cost, rather than the historical input cost, for inventory and cost-of-sales purposes. This has the theoretical advantage of using up-to-date cost levels both in closing inventory and in cost of sales (and therefore in calculating gross profit). However the use of current input costs – often known as current replacement cost accounting – raises its own difficulties in both theoretical and practical terms. The whole question of current replacement cost accounting is discussed in chapter 16.

10.9 Construction contracts

It is in the nature of construction contracts that they last over a long period of time – often over more than one accounting period. The issue of determining the *total* profit on such a contract raises no new accounting problems beyond those discussed above in relation to inventory. However, there is one important and difficult additional issue.

This is the question of allocation of the total profit over the various accounting periods during which the construction takes place. If a contract extends over, say, three years, should the contribution to profits be 0 per cent, 0 per cent and 100 per cent, respectively, for the three years? Can we make profits on something before we have finished it? The realization convention (see chapter 8) might seem to argue against doing so, and the prudence convention would certainly argue against it too. But what would give a 'fair presentation' of the results for each period? All the various users want regular information on business progress. Can we not argue that we can be 'reasonably certain', during the contract, of at least *some* profit – and if we can, then surely the matching principle is more important than slavishness to prudence.

Two alternative approaches have emerged over the years. These are the completed contract method, which delays profit recognition until the end, and the percentage of completion method, which in defined conditions requires allocation over the accounting periods concerned. The effects of these two methods are best shown by a comparative example.

10.9.1 A worked example

The data set out in Table 10.10 pertain to a long-term construction contract with a sales value of €2,000,000. From the figures, we must first compute the gross

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Table 10.10 Construction contract example: initial data

	2001	*2002*	*2003*
Costs incurred during the year	€500,000	€700,000	€300,000
Year-ended estimated costs to complete	1,000,000	300,000	—
Billing during the year	400,000	700,000	900,000
Collections during the year	200,000	500,000	1,200,000

profit recorded under the percentage of completion method, assuming for simplicity that the degree of completion is determined based on costs incurred, and show the necessary accounting entries.

In doing so, we find that, at the end of the first year, the total expected profit, being total revenue minus total expected costs, is €2,000,000 − (€500,000 + €1,000,000) = €500,000. This expected profit is allocated over the

Table 10.11 Profit allocation by comparative methods

	Completed contract		*Percentage of completion*	
2001				
Construction in progress	€500,000		€500,000	
Cash or creditor		€500,000		€500,000
Accounts receivable	400,000		400,000	
Advance billings		400,000		400,000
Cash	200,000		200,000	
Accounts receivable		200,000		200,000
Construction in progress	no entry		166,667	
Gross profit				166,667
2002				
Construction in progress	€700,000		€700,000	
Cash or liability		€700,000		€700,000
Accounts receivable	700,000		700,000	
Advance billings		700,000		700,000
Cash	500,000		500,000	
Accounts receivable		500,000		500,000
Construction in progress	no entry		233,333	
Gross profit				233,333
2003				
Construction in progress	€300,000		€300,000	
Cash or liability		€300,000		€300,000
Accounts receivable	900,000		900,000	
Advance billings		900,000		900,000
Cash	1,200,000		1,200,000	
Accounts receivable		1,200,000		1,200,000
Construction in progress	no entry		100,000	
Gross profit				100,000
Advance billings	2,000,000		2,000,000	
Construction in progress		1,500,000		2,000,000
Gross profit		500,000		—

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three years as shown below, in proportion to the costs of each year:

$$2001: \quad \frac{€500,000}{€1,500,000} \times €500,000 = €166,667$$

$$2002: \quad \frac{€700,000}{€1,500,000} \times €500,000 = €233,333$$

$$2003: \quad \frac{€300,000}{€1,500,000} \times €500,000 = €100,000$$

$$\text{Total gross profit} \quad \underline{\overline{€500,000}}$$

The entries for both the completed contract method and the percentage of completion method for the three years are as set out in Table 10.11.

At the end of each year during which the contract is in progress, the excess of the Construction in progress account over the Advance billings account is presented as a current asset. Ignoring the cash and accounts receivable figures, this leads to the figures shown in Table 10.12.

Table 10.12 Summarized results for completed contract method and percentage of completion method

Year	*Completed contract method*	*Percentage of completion method*
2001		
Construction in progress	500,000	666,667
Advance billings	400,000	400,000
Net current asset	100,000	266,667
Reported profit for year	0	166,667
2002		
Construction in progress	1,200,000	1,600,000
Advance billings	1,100,000	1,100,000
Net current asset	100,000	500,000
Reported profit for year	0	233,333
2003		
Reported profit for year	500,000	100,000

In the above example, the estimated gross profit of €500,000 was the actual gross profit on the contract. If changes in the estimated cost to complete the contract had been appropriate at the end of 2001 and/or 2002, or if the actual costs to complete had been determined to be different when the contract was completed in 2003, those changes would have been incorporated into revised estimates during the contract period.

The presentation of this example has focused on the profit calculation. Inspection of Table 10.12 makes it clear that the difference in the resulting net current asset figure under the two methods is equal to the difference in the cumulative reported profit under the two methods (e.g. €400,000 in 2002) – as, of course, it must be if the balance sheet is to balance.

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Under the IASB emphasis on balance sheet (asset and liability) definition and measurement in its Framework, discussed in chapter 3, this current asset figure requires active consideration. Is the reported current asset amount of €500,000 at the end of 2002 under the percentage of completion method justified? Is it valid from a creditor perspective? Can it be reliably regarded as a resource with future economic benefits? These can be difficult questions in some circumstances, and it perhaps should not always be assumed, at least in the case of long-term construction contracts, that revenue/expense considerations and asset/liability considerations will lead to the same reported results.

Why it matters *The choice between completed contract and percentage of completion methods matters, in essence, for the same reasons that the validity of current inventory figures matters. That is, there is a direct effect on reported periodic earnings, and therefore on the trend of performance over the years, and also a direct effect on balance sheet figures, on balance sheet relativities, and on a variety of commonly calculated ratios. With long-term contracts, the choice may be very significant, because of large numerical differences and greater uncertainties arising from extended time periods, either of which may occur.*

10.10 Construction contracts in practice

The EU Fourth Directive allows both the completed contract method and the percentage of completion method. Different countries tend to use this flexibility in particular ways. Table 10.13 illustrates that, at the national level in Europe, the completed contract method has tended to dominate in more prudent Germany, whereas the percentage of completion method is normal in the Netherlands and the United Kingdom.

Table 10.13 Valuation basis of long-term contracts

	Bel	*Den*	*Fra*	*Ger*	*Ire*	*Net*	*UK*	*Total*
Sample size	*50*	*32*	*40*	*49*	*38*	*40*	*50*	*299*
Evidence of long-term contracts	12	9	6	7	2	9	11	56
Valuation basis used for long-term contracts:								
Completed contract method	1	3	3	6	—	1	2	16
Percentage of completion method	4	5	2	—	1	5	7	24
Both	—	—	1	—	—	1	—	2
Other	1	—	—	—	—	1	—	2
Valuation basis not disclosed	6	1	—	1	1	1	2	12

Source: adapted from FEE, *European Survey of Published Accounts 1991*, (London: Routledge, 1991).

IAS 11 requires the percentage of completion method, once the construction activity is sufficiently advanced for the outcome of the contract to be 'estimated reliably'. IAS 11 specifies the processes required in considerable detail. International practice is gradually moving further in this direction, but it does not follow from this that local practices in those countries with a tradition of using the completed contract method are necessarily changing.

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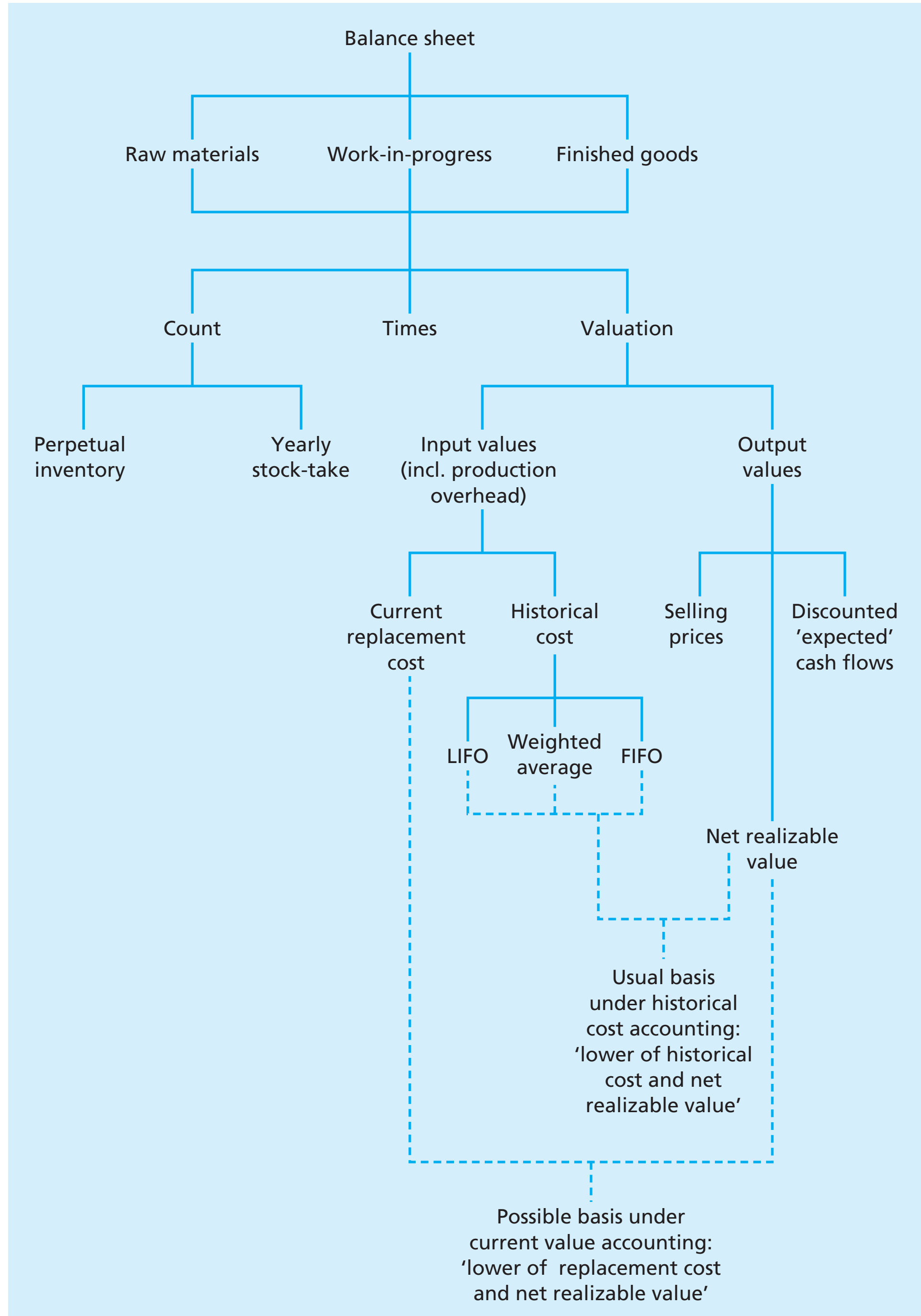
Figure 10.1 Inventory valuation



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The four essential conditions for revenue recognition under the percentage of completion method are set out in IAS 11, for a fixed price contract, as follows:

(a) total contract revenue can be measured reliably, and
(b) it is probable that the economic benefits associated with the contract will flow to the enterprise, and
(c) both the contract costs to complete the contract and the stage of contract completion at the balance sheet date can be measured reliably, and
(d) the contract costs attributable to the contract can be clearly identified and measured reliably so that actual contract costs incurred can be compared with prior estimates.

SUMMARY

A diagrammatic summary of the various aspects of inventory valuation is given in Figure 10.1.

- Valuation of inventory involves establishing quantities, and a monetary amount for each unit. This amount is usually based on historical cost, reduced to net realizable value if this is lower.
- A number of different methods are commonly considered within the historical cost approach, producing different reported results for both inventory and gross profit. The preferable method depends on the criteria chosen as significant.
- Alternatives to historical costs are possible. Output values are not often regarded as desirable, but current replacement cost can be argued to have some economic and informational advantages, provided that certain assumptions about continuity are made.
- Long-term construction contracts, where production of the product is spread over two or more accounting periods, create additional problems as regards the calculation of periodic financial results. The practice of recognizing profits gradually related to the proportion of completion of the contract is becoming increasingly prevalent, but by no means universal.

References and research

There are two important IASB documents that are relevant:

- IAS 2, *Inventories*.
- IAS 11, *Construction Contracts*.

The following papers extend relevant considerations in an international context:

- D. Pfaff, 'On the allocation of overhead costs', *European Accounting Review*, Vol. 3, No. 1, 1994.
- J. Forker and M. Greenwood, 'European harmonization and the true and fair view: The case of long-term contracts in the UK', *European Accounting Review*, Vol. 4, No. 1, 1995.

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Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

10.1 Inventory costing methods such as LIFO and FIFO are different methods of discovering the actual cost of specific inventory items.

(a) True.
(b) False.

10.2 An overstatement of opening inventory results in:

(a) No effect on the period's net income.
(b) An overstatement of net income.
(c) An understatement of net income.
(d) A need to adjust purchases.

10.3 An overstatement of closing inventory in one period results in:

(a) No effect on net income of the next period.
(b) An overstatement of net income of the next period.
(c) An understatement of net income of the next period.
(d) An overstatement of the closing inventory of the next period.

10.4 In a period of *declining* prices, which of the following methods generally results in the lowest balance sheet figure for inventory?

(a) Average cost method.
(b) LIFO method.
(c) FIFO method.
(d) Cannot tell without more information.

10.5 In a period of *rising* prices, which of the following methods generally results in the lowest net income figure?

(a) Average cost method.
(b) LIFO method.
(c) FIFO method
(d) Cannot tell without more information.

10.6 A retail company has goods available for sale for the year of €500,000 at retail (= €300,000 at cost) and closing inventory of €50,000 at retail. What is the estimated cost of goods sold?

(a) €30,000.
(b) €50,000.
(c) €270,000.
(d) €450,000.

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Table 10.14 Inventory items and their costs

Inventory	*Quantity*	*Cost (€)*	*Market*
Category I			
Item A	200	1.00	0.50
Item B	100	2.00	2.10
Item C	100	3.00	2.50
Category II			
Item D	300	2.50	2.00
Item E	200	3.00	3.10

10.7 With reference to Table 10.14 and using the item-by-item method of applying the lower-of-cost-or-market rule to valuing the inventory, the value assigned to inventory item C for inclusion in total inventory on the balance sheet is:

(a) €300.
(b) €250.
(c) €50.
(d) None of the above.

10.8 Using the information from Question 10.7 and the item-by-item method of applying the lower-of-cost-or-market rule to valuing the inventory, the total value of inventory appearing on the balance sheet is:

(a) €1,750.
(b) €1,760.
(c) €1,780.
(d) €2,090.

10.9 Assuming that net purchases cost €250,000 during the year and that closing inventory was €4,000 less than the opening inventory of €30,000, how much was the cost of goods sold?

(a) €246,000.
(b) €254,000.
(c) €276,000.
(d) €280,000.

10.10 Assume a company has a periodic inventory system with an opening balance of €20,000, purchases of €150,000, and sales of €250,000. The company closes its records once a year on 31 December. In the accounting records, the inventory account would be expected to have a balance on 31 December prior to adjusting the closing entries that was:

(a) Equal to €20,000.
(b) More than €20,000.
(c) Less than €20,000.
(d) Cannot tell without more information.

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? Exercises

Feedback on the first two of these exercises is given in Appendix E.

10.1 'The production cost of inventory is always highly subjective and uncertain, because of the problem of overheads. Since the valuation of an inventory of manufactured items can never be reliable, accountants should concentrate on making it relevant.' Discuss.

10.2 V. O. Lynn commences business on 1 January buying and selling musical instruments. She sells two standard types, violas and cellos, and her transactions for the year are as set out in Table 10.15 (all prices are in euros):

Table 10.15 Sale/purchase transactions for V. O. Lynn

	Violas		*Cellos*	
	Buy	*Sell*	*Buy*	*Sell*
1 January	2 at 400		2 at 600	
31 March		1 at 600		
30 April	1 at 350		1 at 700	
30 June		1 at 600		1 at 1,000
31 July	2 at 300		1 at 800	
30 September		3 at 500		2 at 1,100
30 November	1 at 250		1 at 900	

You are aware that the cost to V. O. Lynn of the instruments is changed on 1 April, 1 July and 1 October, and will not change again until 1 January following.

(a) Prepare a statement showing gross profit and closing inventory valuation, separately for each type of instrument, under each of the following assumptions:

(i) FIFO;
(ii) LIFO;
(iii) weighted average (separately for each transaction);
(iv) replacement cost (assuming that this is equivalent to the most recent price).

(b) At a time of rising prices (i.e. using the cellos as an example), comment on the usefulness of each of the methods.

10.3 Marcus Co. has been in operation for three years. The purchases and sales information in Table 10.16 represents the company's activities for its first three years:

Table 10.16 Sale/purchase transactions for Marcus Co.

	2002	*2003*	*2004*
Sales (unit)	12,000 @ €50	20,000 @ €60	18,000 @ €65
Purchases (units)	4,000 @ €20	8,000 @ €35	7,000 @ €40
	7,000 @ €20	4,000 @ €30	5,000 @ €35
	8,000 @ €30	1,000 @ €40	8,000 @ €25

Prepare a schedule illustrating the number of units held at the end of each of the three years shown.

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10.4 Using the information contained in Exercise 10.3 above, calculate the value of the year-end inventories using FIFO and LIFO. Also, prepare profit and loss accounts showing the gross profit under each of the valuation methods for all three years.

10.5 R and A are brothers. Recently, their aunt died leaving them €1,000 each. Initially, they intended setting up in partnership selling pils and lager. However, R felt that there was no future in the lager market, whereas A expected that lager sales would boom. After an argument, the brothers decided to set up their own separate businesses, R trading in pils and A in lager.

The following shows the transactions undertaken by R in their first trading period.

Purchases	260 pils at €1.25 each.
Purchases	100 pils at €1.50 each.
Purchases	200 pils at €3.75 each.
Then, sales	300 pils at €4 each.

Whilst R was finding that prices were rising swiftly in the market for pils, A by shrewd buying was able to obtain a lower price per unit for each successive purchase he made. The transactions that A undertook in the trading period were:

Purchases	200 lager at €1.75 each.
Purchases	200 lager at €1.70 each.
Purchases	200 lager at €1.55 each.
Then, sales	500 lager at €2 each.

(a) At the end of the period both brothers wish to withdraw all their profits (all transactions were made in cash). How much will each brother be able to withdraw:

(i) calculating profit on a FIFO basis;
(ii) calculating profit on a LIFO basis?

(b) After withdrawing all profits in cash, what ability has each brother to replenish the stock of the goods he trades in? What assumptions do you need to make in answering this question?

10.6 A firm buys and sells a single commodity. During a particular accounting period it makes a number of purchases of the commodity at different prices. Explain how assumptions made regarding which units were sold will affect the firm's reported profit for the period.

10.7 What is meant by 'lower of cost and net realizable value'? What difficulties exist in the application of this rule?

10.8 'The four essential conditions of IAS 11 (see section 10.10) provide entirely adequate safeguards for the use of the percentage of completion method in long-term contracts. When these requirements are met, failure to use the method leads to misleading financial statements.' Discuss.

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11

Financial assets, liabilities and equity

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- outline the nature, recognition and measurement of financial assets (cash, receivables and investments) and financial liabilities;
- tell when different types of investments should be valued in different ways, and when to record gains and losses;
- explain that there are two main types of liabilities (creditors and provisions) and outline the current practices relating to their recognition and measurement;
- list the components of an enterprise's residual equity;
- explain the differences in the meaning of accounting terms such as allowance, provision, fund and reserve;
- distinguish between debt and equity securities, while understanding that securities can have features of both.

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11.1 Introduction

As explained earlier in this book, the items in a balance sheet can be summarized under the headings of three main elements: assets, liabilities and equity. Chapter 8 looked at the definition of assets and liabilities, and some ideas relating to their recognition. Chapters 9 and 10 concentrated on the recognition and measurement of a number of particular types of assets. This chapter includes coverage of the other main type of asset: financial assets, such as cash, receivables and investments.

The treatment of financial assets is closely linked to the treatment of liabilities (including provisions), which are also examined in this chapter. The IASB has two important standards on financial assets and liabilities: IAS 32 (on disclosure and presentation issues) and IAS 39 (on recognition and measurement). As far as these standards are concerned, financial instruments are very widely defined – for example, financial assets include cash and receivables. This chapter also looks at equity: the residual interest in the net assets of the company. Equity itself is generally divided into various categories. As will be explained, some financial instruments contain elements of both liabilities and equity.

It may be helpful to refer to the standard European balance sheet headings, as illustrated earlier in Table 8.1. For convenience, this is repeated here in a somewhat simplified form as Table 11.1.

Table 11.1 Main headings in a balance sheet

Assets	*Capital and Liabilities*
Fixed assets	Equity
Intangible assets	Subscribed capital
Tangible assets	Share premium
Investments	Revaluation reserve
	Legal reserve
Current assets	Profit and loss reserves
Inventories	
Debtors	Provisions
Investments	
Cash	Creditors

This chapter deals with the financial assets (fixed and current investments, debtors and cash), and with all the items on the capital and liabilities side of a balance sheet.

11.2 Cash and receivables

There are fewer problems of recognition and measurement with cash than with many other assets. If an enterprise controls some cash, there will clearly be a future benefit in the shape of things that can be bought. Again, apart from the problems of foreign currency (see chapter 15) and inflation (see chapter 16), the value of cash is generally its face value.

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However, there are some difficulties of definition. For example, suppose that the enterprise deposits most of its spare cash with a bank in a 48-hour notice deposit account. Is that cash? The heading 'cash' in a balance sheet generally means 'cash at hand and in the bank'. Nevertheless, if money were deposited with the bank for a fixed one-year term in order to gain a higher level of interest, presumably the enterprise would have an investment rather than cash.

In other words, some dividing line has to be invented between 'cash' and 'investments'. In IFRSs, the heading in the balance sheet is 'cash and cash equivalents' which generally includes investments of up to three months maturity that are convertible to known amounts of cash. Such a meaning is also used in IFRS cash flow statements (see chapter 13). However, alternative views could be taken. For example, for the purposes of UK cash flow statements, 'cash' means amounts on hand and deposits with up to 24 hours' notice.

Generally, when amounts of money are due from persons or enterprises other than financial institutions, the amounts are called receivables (US English) or debtors (UK English). As usual, it is necessary to check that there is an asset and that it should be recognized. Often this will be easy, because there may be a contractual right to receive a specified amount of cash on a particular date.

This will also give a good start to the process of measuring the asset. Generally, short-term receivables are valued at the amounts expected to be received, after making allowance for any clear or likely non-payment by the debtors. These allowances against the value of receivables for possible bad debts can be split into specific and general categories. The first of these relates to identified debtors who are unlikely to pay because of bankruptcy or other reasons. The second (general allowances) are often calculated in terms of a percentage of the total receivables, based on the experience of previous years. Sometimes, these various allowances against the value of receivables are called 'provisions', or 'reserves'. This is unhelpful because those terms also have other meanings (see later).

In most countries, the setting-up or increase of specific allowances is a tax-deductible expense. By contrast, in several countries (e.g. Denmark, France, the UK and the US) a general allowance is not tax-deductible because it is too easy for the taxpayer to manipulate it. Nevertheless, in some of the countries where tax and financial reporting numbers are kept closely in line (e.g. Germany, Italy and Japan), general allowances are indeed tax-deductible, which may lead to deliberate inflation of them. The disclosures of Japanese companies make this the most obvious, as in the box below.

Allowances against receivables

> Allowance for doubtful receivables is provided at the maximum amount which could be charged to income under Japanese income tax regulations, as adjusted to correspond to receivables after eliminating intercompany balances.
>
> *Source*: Matsushita published financial statements for 1999.

In cases where fixed amounts of money are to be received after a considerable period, it is necessary to ask whether the face value of these amounts represents a fair valuation. The market value of amounts to be received in one year's time would be less than their face value.

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Activity 11.A How much would an enterprise be willing to pay in order to gain the completely certain receipt of €100,000 in exactly five years' time? Assume that the current (and expected) rate of interest on government bonds is 5 per cent.

Feedback A rational enterprise would be willing to pay noticeably less than €100,000 even if the expected receipt was not risky. The value could be obtained by discounting the sum at 5 per cent for five years. For one year, the discounted value (or net present value, NPV) would be

$$€100{,}000 \times \frac{100}{105} = €95{,}238.$$

For five years, the NPV would be

$$€100{,}000 \times \left(\frac{100}{105}\right)^5 = €78{,}353.$$

IAS 39 (paragraphs 73–75) suggests that account should be taken of the time value of money for those receivables that are not short-term. This has not been the traditional practice in most countries. However, in Germany, there is a long history of taking account of this in order to reduce the value of receivables (e.g. see box below). However, given that payables are not discounted, this discounting of receivables might be seen rather as an indication of prudence and a desire to reduce taxable income.

Valuation of receivables

Receivables are generally carried at their nominal value. Notes receivable and loans generating no or a low-interest income are discounted to their present values. Lower attributable values due to risks of collectability and transferability are covered by appropriate valuation allowances.

Source: BASF published financial statements for 2002.

11.3 Investments

11.3.1 Types of investment

The most common financial investments that many companies have, apart from deposits with banks, are holdings of the debt securities of other companies (e.g. debentures) or of the equity securities of other companies (e.g. ordinary shares). The nature of these securities is discussed in more detail later for the purposes of examining accounting for them by the enterprise that issues them. The securities become the investments of the enterprises or persons that acquire them.

In most countries, investments are divided into 'fixed' and 'current' (as in Table 11.1) on the basis of whether or not they are intended by a company's directors for continuing use in the business. Then, fixed asset investments (or 'non-current investments') are usually valued at cost, less any impairment in

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value that takes account of the long term rather than the immediate market value (see chapter 9). By contrast, current assets are valued at the lower of cost and net realizable value.

The problem with this conventional approach is that it rests on a vague distinction that cannot be easily checked by auditors or relied upon by users. Just how long is 'continuing'?

Why it matters

Suppose that the fixed/current distinction is based on the intentions of directors as above. Suppose also that a company has bought a large amount of investments early in the year. Because of a stock-market crash near the year end, the market value of the investments falls. If the directors want to make the financial statements look as good as possible, they will intend (or say they intend) to keep the investments. They can thereby avoid the use of any low net realizable value in the balance sheet and any resulting loss in the income statement. They would argue that the low value was unlikely to be permanent.

However, they may want *to take account of the fallen market value, because the loss would be tax-deductible (e.g. in Germany) or because they want to show lower profits in order to avoid a claim for wage rises. If so, they can say that the investments are current assets.*

11.3.2 Valuation problems

It may seem unsatisfactory that identical pieces of paper can be valued in different ways by the same company, depending on the plans (or alleged plans) of a company's management. Admittedly, reference to the intentions of directors is more generally the basis for the determination of the fixed/current distinction. However, it is usually obvious in any particular enterprise whether materials are inventory or fixed assets. It is not obvious when looking at investments.

Returning to the 'Why it Matters' problem above, it is not only losses that can be postponed or taken quickly. The same applies to gains. On this subject, try Activity 11.B.

Activity 11.B

Suppose that a company started with no investments but with cash of 100. It then buys some listed shares for 10. The result is shown in part A of Figure 11.1. Then, suppose that the investment does well so that its market value rises to 15. Has the company made a gain?

Feedback

Under conventional accounting in most countries, the implied gain of 5 is neither realized nor recognized. However, supposing that a company *wants* to record a profit. All it has to do is to telephone the stockbroker and request a sale followed by an immediate re-purchase. Ignoring any tax effects, the results will be as in part B of Figure 11.1. After this transaction, the company has the same investments and the same amount of cash as before, but the telephone call produced an increase in the recorded figure for the investments of 5 and the recognition of profit of 5. It would, of course, be possible to allow unrealized profits to build up for years and then to sell the investments (and buy them back) when a profit was needed to cover up a trading loss.

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Figure 11.1 Purchase, sale and re-purchase of investments

A. *Balance sheet effects after purchase*

Investments	0		
	+ 10		
	10		
Cash	100		
	− 10		
	90		

B. *Balance sheet effects after sale and re-purchase*

Investments	10	Profit	+5
	− 10		
	+ 15		
	15		
Cash	90		
	+ 15		
	− 15		
	90		

The real position is often even worse than that examined in Activity 11.B. Suppose that a company had a large number of investments, some with unrecognized gains and some with unrecognized losses. Then it would be possible to sell particular investments in order to achieve various amounts of gains or losses.

Why it matters

The conclusion from this discussion is that financial reporting would be more relevant if there were continual use of current market values, irrespective of whether investments are sold. This would ensure the immediate reporting of all such gains and losses, independently of management action and possible manipulation. Of course, there would be major problems of cash flow for taxpayers if the tax system followed this approach and demanded tax on unsold investments – as would happen in many countries (e.g. Germany, France or Italy) – if the gains were included in the financial statements.

Although current values may be more relevant, are they sufficiently reliable? This is the classic problem examined in chapters 3 and 8. Fortunately, for some investments (e.g. listed shares), there is a market price published in most newspapers; this is both reliable and relevant. As explained below, in the case of some such investments, they are valued at current prices by banks and other financial institutions in several countries, and this is now required for companies in general by IAS 39 (paragraph 69).

However, for some investments it may be impossible to observe or to estimate a market price. Here, IAS 39 reverts to a cost basis, taking account of the time value of money. Furthermore, IAS 39 preserves some of the old idea of basing

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values on the intentions of the directors, in that those investments intended to be held to maturity are to be valued by relation to their cost. Equity investments do not have maturity dates, but most debt investments do. This means that fluctuations in value can remain unrecognized if directors state that their investments are intended to be held to maturity.

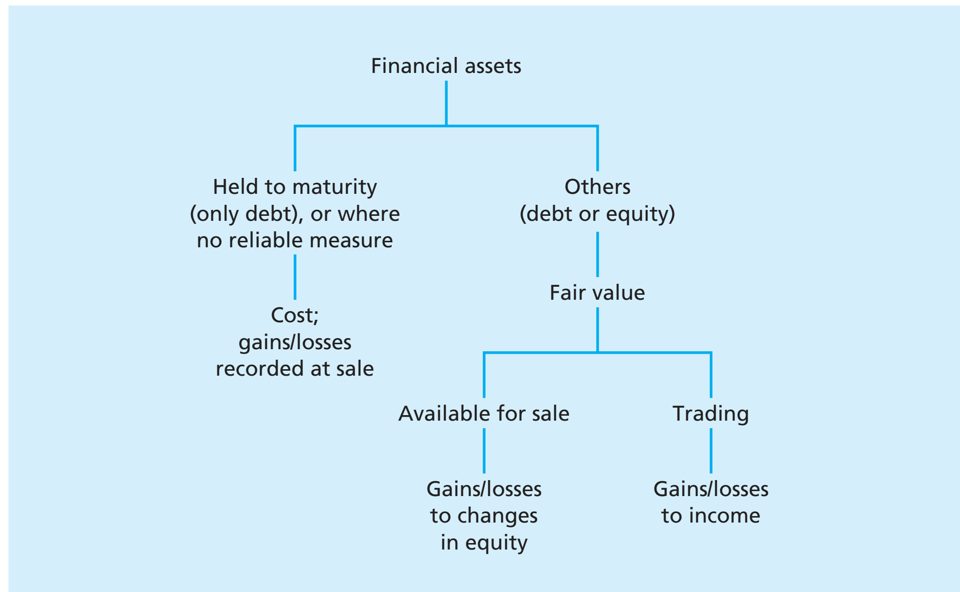
11.3.3 Accounting for gains and losses

When investments are revalued to fair value before they are sold, it is necessary to decide where to show the recognized gains and losses. The examination of revenue recognition in section 8.4 suggested that gains should be taken to income when they can be reliably measured. The revaluations of investments under IAS 39 seem to fit this description, because the revaluation would not have been carried out if it could not have been measured reliably.

The conclusion in IAS 39 (paragraph 103) is that some revaluation gains and losses should be taken to income. Referring back to the example of Figure 11.1, under IAS 39 the investments would be revalued to 15 whether sold or not, and a gain of 5 would be recorded as income whether there was a sale or not. Many company managers do not like to show gains and losses until there is a sale because this makes the profit figure more difficult to control. Their wishes were taken into account in IAS 39, in that gains and losses are shown in the statement of changes in equity (see chapters 6 and 8) if the investments were not designated as for 'trading' but were merely 'available for sale'. This last category is a residual one, containing all the investments not designated as held to maturity or for trading.

Figure 11.2 summarizes the IAS treatments of investments.

Figure 11.2 IAS 39's treatment of financial assets



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11.4 Liabilities

11.4.1 Definition

As mentioned in earlier chapters, the term 'liability' now has a precise definition in the IASB Framework, which is similar to that in the US, the UK and some other countries. As a reminder, the IASB definition is:

> A liability is a present obligation of the enterprise arising from past events, the settlement of which is expected to result in an outflow from the enterprise of resources embodying economic benefits.

This means that anything in the right-hand column of Table 11.1, excluding 'equity', needs to meet the definition of 'liability'.

11.4.2 Creditors

It will be simpler to start at the bottom of Table 11.1 with 'creditors'. The figures under 'creditors' are sums legally due to outsiders where their identity and the amount are clear. Consequently, there is generally no doubt that these items are liabilities or that they can be measured reliably enough to recognize them in the balance sheet. Examples are a bank loan or an unpaid invoice from a supplier. Table 11.2 adds detail to Table 11.1 by showing the standard headings for liabilities in one of the balance sheet formats of the EU Fourth Directive. There is no standard format in IAS. These items could be divided into 'non-current' and 'current' on the basis of whether they are to be repaid within one year. Such a distinction is required in European laws and allowed by IAS 1, *Presentation*, as explained in chapter 6.

Table 11.2 Headings of liabilities in the EU Fourth Directive

Provisions
1. Provisions for pensions and similar obligations
2. Provisions for taxation
3. Other provisions

Creditors
1. Debenture loans
2. Amount owed to credit institutions
3. Payments received on account of orders
4. Trade creditors
5. Bills of exchange payable
6. Amounts owed to affiliated undertakings
7. Amounts owed to participating interests
8. Other creditors including tax and social security
9. Accruals and deferred income

The first item under 'creditors' in Table 11.2 is 'debenture loans'. These are amounts due at a fixed face value and a fixed date to creditors who have lent money to the company in the past. The piece of paper that acknowledges the debt

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can be passed from one person to another. In many cases, debentures can be traded on a stock exchange.

The last item, 'accruals and deferred income', also needs some explanation further to that of section 3.3.2. Accruals are a recognition that the business has used up services in the period but not paid for them. For example, suppose that a company pays for a service (e.g. the supply of electricity) once per year. The company's accounting year ends on 31 December 20X1. The electricity bill is measured for the year to 31 January 20X2. At the balance sheet date, there has been no bill for most of the year. However, the company has used electricity and will have to pay for it, and so an accurate estimate can be made (and recognized) of the relevant expense and the resulting liability.

When it comes to measuring the size of all these creditors, they are normally valued at their face values. If amounts are not to be paid in the near future, there is usually an interest payment to be made to the creditor. In the unlikely event of there being material amounts owing in the long term but with no interest to pay, it would be necessary, under IAS 39, to reduce the liability (to net present value) to take account of the time value of money.

11.4.3 Provisions

Provisions are defined by IAS 37 as being liabilities of uncertain timing or amount. A good example is the first entry in Table 11.2: provisions for pensions. Suppose that a company promises to pay a pension to an employee when she retires. The pension entitlement builds up as the employee works for the company for more and more years. The pension will be paid every year from retirement to death, and perhaps will be equal to half the final year's salary. Such an entitlement would be called a 'defined benefit pension'.

From the company's point of view, the pension is part of employee compensation; it is a current salary expense with a postponed payment date. Each year, the company should charge a pension salary expense and increase the liability to pay the pension later. The obligation to the employee meets the above definition of liability. However, the exact amount depends on many things, such as the final salary and how long the employee will live after retirement. Consequently, the company can only *estimate* the amount, and so the liability is called a *provision*.

It should be noted that this does *not* mean that money or investments have been set aside to cover future payments to the pensioner. It might be a good idea to do this, but it requires the company to take deliberate action that is quite separate from accounting for the liability. If money is sent irrevocably from the company into the hands of financial managers who will invest it so as to pay pensioners, this activity is called *funding*. For the balance sheet, the value of the accumulated fund is set off against the accumulated obligation, because the fund can only be used to pay the pensioners, so this reduces the probable size of the company's liability. The balance sheet then shows the balance of the unfunded obligation as a provision.

It is vital not to confuse a provision with a fund. A provision is an obligation to pay money. A fund is a pile of assets (money or investments). Internationally,

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the scope for confusion is considerable; for example, the Italian for 'provision' is *fondo*. Other language points are considered at the end of this chapter.

Other examples of provisions are estimates of liabilities to pay tax bills or, in the case of a mining company, to pay for cleaning up the environment after extracting minerals from the earth. Also, a company should recognize a provision for its obligation for future repair costs on products as a result of warranties given at the time of sale.

The particularly controversial issue in the area of provisions is the degree to which anticipated expenses and losses should be provided for. The Fourth Directive (Article 20, as amended in 2003), on which laws in this respect in EU countries and some others are based, states that 'provisions' covers:

1. liabilities likely to be incurred or certain to be incurred but of uncertain amount or timing; and
2. at the option of each country's lawmaker, the heading can also cover charges to be incurred in the future but with origins before the balance sheet date.

This seems to allow the creation of provisions for trading losses, currency translation losses or repair expenses of an ensuing year, which are connected to actions of current or earlier years. As discussed in section 8.2, such items generally do not meet the definition of a liability under IFRS requirements, and so they should not be provided for. Fortunately, the EU's item 2 in the above list is only an option, and item 1 is sufficiently vague to be capable of being interpreted in a way consistent with IAS 37, i.e. that there must be an obligation at the balance sheet date that will lead to a probable outflow of resources.

Activity 11.C

Suppose that a company has a 31 December 20X1 year end. It has had a very bad year, and its directors decide at a board meeting on 15 December 20X1 to close down half the factories and to lay off half the staff at the end of January 20X2. Detailed plans are made and minuted at the board meeting. However, in order to avoid an unhappy Christmas, the plans are kept secret until 7 January 20X2. When the financial statements for 20X1 are prepared in February 20X2, should the balance sheet record a provision for the large restructuring and redundancy costs?

Feedback The traditional (and prudent) answer to this question would be 'yes', and there would be no problem in fitting such a provision into the EU Fourth Directive's definition (as above). However, is there a liability at the balance sheet date? (Refer back to the definition of 'liability' at the beginning of this section.) There is expected to be a future outflow of resources, but the same could be said for next year's wages bill, which we would not expect to charge this year. Is there an obligation to a third party on 31 December 20X1? The answer, depending on the exact circumstances, seems to be 'no'. Therefore, no provision should be recognized under IFRS requirements or under other similar sets of rules, although the notes to the financial statements must explain the situation.

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When a provision is to be recognized, it becomes necessary to value it. By definition, there are estimates to make. The accountant must make the best possible estimates and be prepared to revise them at each balance sheet date in the light of better information. Provisions, such as those for pensions, may extend decades into the future. This suggests that a fair valuation requires the use of discounting to take account of the time value of money.

Why it matters *The 1996 and 1997 income statements for the large Swiss pharmaceutical company Roche are shown as Figure 11.3. In the 1997 income statement there is a SF2,981 million restructuring expense for planned restructuring of a new subsidiary in 1998. This expense helped to turn what would have been a profit into a large loss. It seems from the notes that Roche did not really control the subsidiary until early 1998, and so there was probably no liability to be provided for at the end of 1997. Roche was following IFRS requirements, but this was before substantial clarification of the rules on provisions and business combinations. The loss of 1997 looks very strange and probably produces a misleading run of profits for the four years 1996–9. The 'net income' for 1998 was SF4,392 million and for 1999 it was SF5,031 million.*

Figure 11.3 Consolidated statements of income of Roche (SFm)

	1996	*1997*
Sales	15,966	18,767
Cost of goods sold	(4,889)	(6,091)
Gross profit	11,077	12,676
Marketing and distribution	(3,931)	(5,060)
Research and development	(2,446)	(2,903)
Administrative	(791)	(876)
Other operating expense	(489)	(247)
Operating profit	3,420	3,590
Non-operating income	1,289	1,577
Result before special charges and taxes	4,709	5,167
Special charges		
Acquired in-process research and development	–	(4,445)
Restructuring	–	(2,981)
Taxes		
On result before special charges	(758)	(830)
Benefit from special charges	–	1,118
Income applicable to minority interests	(52)	(60)
Net income (loss)	3,899	(2,031)

Activity 11.D In the example discussed earlier in Activity 11.C, would an IFRS balance sheet give a fair presentation if it did not recognize a provision for the expenses of restructuring that had been decided upon by 31 December 20X1 and that were likely to be paid early in 20X2?

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Feedback In order to answer this question, it is necessary to remember that the financial statements are prepared using a series of conventions that users are expected to be familiar with. The definition of 'liability' under the IFRS regime is very similar to that used in the United States and the United Kingdom. It has been the same for well over a decade and is published in the Framework and various standards. Would it be fair to show an item under the heading 'liabilities' that clearly did not meet the definition? Probably not.

Furthermore, it should be noted that unless everyone sticks to this clear definition, it is very difficult to stop companies from warping profits by choosing to make provisions in good years but not in bad years.

In order to inform the users, IFRS requires disclosures in the notes about any restructuring proposals when they have been announced or begun by the date that the financial statements have been authorized for issue.

11.4.4 Contingent liabilities

Suppose that company X borrows €1 million from the bank but can only do so by persuading company Y to promise to pay the loan back to the bank in the unlikely event that company X cannot do so. Company Y has thereby guaranteed the loan. Is this guarantee a liability for company Y? In a sense, there is a legal obligation, but it is unlikely to be called upon. Where there are unlikely outflows caused by obligations or possible obligations, these are called *contingent liabilities* and should be disclosed in the notes to the financial statements.

11.5 Equity

As noted several times in this book, the total equity is just the residual difference between assets and liabilities. However, for various purposes it is helpful to identify components of equity. For example, it may be useful to know how much could legally be paid out to shareholders. Certain elements of equity, including share capital under most circumstances, cannot be distributed until the company is closed down. The five headings under 'equity' in Table 11.1 will now be examined.

11.5.1 Subscribed capital

All companies must have some ordinary shares (called 'common stock' in US English). These are the residual equity in the business after all other more specific claims have been considered. In very simple terms, ordinary shareholders come last in the queue of claimants on the business resources, and they are entitled to everything 'left over'. A wide variety of other types of share may also exist for any particular business. Non-voting shares are exactly what the name implies. Companies may issue different classes of ordinary share where the precise rights of the different classes are defined by the company's constitution. In some countries, e.g. the Netherlands, a certain type of priority shares have dominating voting rights. A more fundamental distinction exists with preference shares.

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These have preference over the ordinary shares as regards dividends, and usually also as regards the repayment of capital sums in the event of the company being closed down.

It must be remembered that a dividend is never receivable automatically as of right. Dividends are only receivable by shareholders if distributable profits are available in the company, and if the dividends are approved by the company in general meeting. If only very limited scope for the payment of dividends exists, then the preference shareholders will come first in the queue for those limited dividends. Because preference shares are clearly safer than ordinary shares when things go badly, they can expect a lower return when things go well. Usually preference shares carry a known and fixed percentage entitlement to dividends (if dividends are available at all).

Preference shares may be cumulative, in which case any dividend 'entitlement' not declared in any particular year carries forward to the following year(s), and would need to be settled in the later year together with that year's preference entitlement before the ordinary shareholders could expect any dividend at all. In many jurisdictions, preference shares are no longer popular because, from an ordinary shareholder's perspective, it is usually beneficial from a tax point of view to raise loans rather than to create further preference shares.

Some types of share, particularly preference shares, may be redeemable. This means that they may be paid off and cancelled under terms defined in the original offer document. Complicated rules exist (which are outside the scope of this text) for ensuring that owners' equity as a whole is not reduced by this procedure to the detriment of creditors. The cancellation of ordinary shares in a similar way is permitted in most countries, but only under close legal restriction and supervision.

In most countries, shares have a *par value* (or *nominal value*) that distinguishes them from other types of share. This par value may have been the issue price of the type of share when it was first issued many years ago. The share capital figure in the balance sheet is the total number of shares multiplied by this par value.

Sometimes, shares may have been issued without calling immediately for full payment. This means that an amount of the potential share capital would be uncalled, or called but not yet paid. Such unreceived share capital is sometimes shown as an asset (see chapter 9), leaving the share capital figure at the total par value.

11.5.2 Share premium

Share premium is called 'additional paid-in capital' or 'capital surplus' in US English. It is an amount paid to the company in excess of the par value when the company issued the existing shares to their original shareholders. For example, suppose that a million shares of nominal value €10 each are issued by a company in exchange for €30 million cash. The record of this will be:

Debit: Bank	€30 m
Credit: Share capital	€10 m
Credit: Share premium	€20 m

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For the purposes of interpreting a balance sheet, it is generally suitable to add the share premium to the share capital and to treat them identically.

Why it matters *What is the significance of the difference between subscribed capital and share premium? Well, unusually for a 'Why it Matters', it does not really matter for most purposes. This is really a legal point that does not affect analysis of a going concern company for most purposes. For the calculation of the ratios discussed in chapter 7, the two elements can be added together as equity capital.*

11.5.3 Revaluation reserve

The third type of equity is the *revaluation reserve*. This represents the extra claims caused when assets are revalued without the gain being taken to income. Depending on practice and legal restrictions, which vary widely in different countries (see chapter 9), this reserve may be caused by ad hoc revaluation of certain assets, or may arise through a more rigorous and formal valuation policy. Under conventional accounting in most countries, these reserves are generally regarded as not available for distribution as long as the assets remain unsold.

11.5.4 Legal reserve

The heading *legal reserve* refers to undistributable reserves required to be set up by particular laws within a country. For example, French law requires certain companies to set aside 5 per cent of profits each year until the legal reserve equals 10 per cent of share capital. There are somewhat similar laws in most 'macro' countries (see Figure 5.1), such as Belgium, Germany, Italy, Japan and Spain. The purpose of the laws is to protect creditors by restricting the size of distributable profits and thereby inhibiting the company from paying cash out as dividends to shareholders.

Such legal reserves are not found in the United States, the United Kingdom, Denmark or the Netherlands. The requirement for legal reserves in Norway was removed in 1998, which is a symptom of the direction of change in accounting in that country in the 1990s.

There are some language difficulties here. The term 'legal reserve' is not used here to refer to all reserves that are undistributable by law, which would include revaluation reserves. Also, it is helpful not to call these amounts 'statutory reserves' because that raises a confusion between statute law and a company's own private rules, sometimes called its statutes.

11.5.5 Profit and loss reserves

Profit and loss reserves include undistributed profits not shown under other headings above. In a simple company with no legal reserves, this would be all of this year's and previous years' undistributed profits.

It would be misleading to call this amount the 'distributable profit', which is an amount determined under the laws of each country. For example, if buildings are revalued upwards, depreciation expenses should rise (see chapter 9). This would

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reduce profit and loss reserves. However, UK law requires distributable profit to be calculated ignoring this, so that the legally distributable profit does not depend on whether a company chooses to revalue or not. More importantly, when dealing with the consolidated financial statements of groups (see chapter 14), the concept of distributable profit is meaningless in many countries because a group cannot distribute profit. This can only be done by an individual legal entity such as a parent company, although the overall group position will be considered when deciding on dividends.

11.6 Reserves and provisions

A major source of confusion surrounding the issues in this chapter is the international difference in the use of the words 'reserve' and 'provision'. In section 11.2 it was pointed out that it would be helpful to refer to value adjustments against receivables as 'allowances' rather than as provisions or reserves. In section 11.4 it was stressed that provisions are obligations to pay money (liabilities), not funds of money (assets). From sections 11.4 and 11.5 it should be clear that there is a vital distinction between a provision and a reserve. Setting up a provision for €1 million would involve:

Debit: Expense	€1 m
Credit: Liability	€1 m

Setting up a legal reserve, for example, would involve:

Debit: Equity (profit and loss reserve)	€1 m
Credit: Equity (legal reserve)	€1 m

Why it matters *Setting up a provision in the manner described above makes profit worse by a million and net assets worse by a million, whereas setting up a legal reserve changes nothing of importance for interpreting the financial statements.*

Activity 11.E Examine the right-hand sides of the published balance sheets of an Italian company (Costa Crociere, as seen before in Figure 8.2) and a French company (Total Oil). The relevant extracts are shown as Table 11.3. What is your opinion of the use of the word 'reserve'?

Feedback The translators have made a mistake here. They have used the English term 'reserve' to mean two vitally different things: reserves and provisions. This is despite the fact that the original Italian used *riserva* and *fondo*, and the French used *réserve* and *provision*. The text below will explain why the translators fell into this error.

The terminological confusion is largely caused because of a difference between UK and US usages. In the United Kingdom, the distinction between 'reserve' and 'provision' is used throughout this chapter and seen in Table 11.1. However, in the United States the words 'reserve' and 'provision' are, in practice, used interchangeably. For example, one could refer to a pension reserve or a pension

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Table 11.3 Confusing use of the word 'reserve' on the right-hand side of balance sheets

Costa Crociere (Italy)[a]	*Total Oil (France)*[b]
STOCKHOLDERS' EQUITY	SHAREHOLDERS' EQUITY
Capital stock	Common shares
Additional paid-in capital	Paid-in surplus
Legal reserve	Revaluation reserves
Other reserves	Legal reserve
Retained earnings	Untaxed reserves
Net income for the year	General reserves
	Retained earnings
RESERVES FOR RISKS AND CHARGES	Income for the year
Income taxes	
Other risks and charges	CONTINGENCY RESERVES
	Reserves for financial risks
RESERVE FOR SEVERANCE INDEMNITY	Reserves for retirement benefits
	Reserves for specific industry risks
RESERVE FOR GRANTS TO BE RECEIVED	
	DEBT
PAYABLES	

[a] Abbreviated from Figure 8.2.
[b] Abbreviated from published report of Total Oil. These headings relate to the parent company for 1993. Subsequently, no parent accounts are available in English. The more recent consolidated statements contain the same confusion with the word 'reserve', but less plainly.

provision. This is *not* confusing to Americans because they generally do not use the word reserve to mean a part of equity. Indeed:

- there are no legal reserves in the US;
- revaluation reserves relating to available-for-sale investments (see section 11.3) are shown as 'cumulative other comprehensive income';
- profit and loss account reserves are called 'retained earnings'.

The confusion arises when translators fail to spot this UK/US difference. To correct Table 11.3 would require the use of the word 'provision' for the items not shown within the 'equity' heading. This would be normal UK usage and acceptable US usage. Table 11.4 summarizes the words used in several languages. International standards generally avoid the word 'reserve'.

Table 11.4 Words for 'provision' and 'reserve' in various languages

UK English	*Provision*	*Reserve*
US English	*Provision/reserve*	*[Element of equity]*
IFRS documents	*Provision*	*[Element of equity]*
French	*Provision*	*Réserve*
German	*Rückstellung*	*Rücklage*
Italian	*Fondo*	*Riserva*
Danish	*Hensættelse*	*Reserve*
Dutch	*Voorziening*	*Reserve*
Norwegian	*Avsetning*	*Reserve*
Swedish	*Avsättning*	*Reserv*

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Another expression that is often found, particularly in prudent countries (e.g. Germany) and particularly relating to banks, is 'secret reserves' or 'hidden reserves'. These would arise because a company:

- failed to recognize an asset in its balance sheet; or
- deliberately measured an asset at an unreasonably low value; or
- set up unnecessarily high provisions.

These actions might have been taken in the name of prudence or, in some countries, in order to get tax deductions. They are illustrated in Activity 11.F below. In all three cases, net assets will consequently be understated and therefore equity will be understated. The amount of understatement could be called a secret reserve.

Of course, most systems of accounting contain some degree of secret reserve. For example, the IFRS regime does not recognize the internally generated asset 'research'; and it is normal to value assets at cost, which is usually below fair value.

Activity 11.F

Suppose that an enterprise's balance sheet looked as in Figure 11.4. Suppose also that you discover that the enterprise has not done its accounting correctly, for it should have:

- recognized an extra intangible fixed asset at a value of 3,
- not recognized a provision (because there was no obligation at the balance sheet date) of 2.

How would you correct the balance sheet? What difference will it make to a gearing ratio?

Figure 11.4 A balance sheet containing secret reserves

Fixed assets	10	Share capital	6	
		Reserves	4	
Current assets	6			10
		Provisions (long-term)		3
		Loans (long-term)		2
		Current liabilities		1
	16			16

Feedback Before the corrections, the gearing ratio could be measured as:

$$\frac{\text{long-term liabilities}}{\text{equity}} = \frac{3+2}{10} = 50 \text{ per cent.}$$

To correct the balance sheet, the following adjustments should be made:

- fixed assets + 3; reserves + 3;
- provisions – 2; reserves + 2.

So the total of equity will now be 15 not 10; and the total provisions will be 1 not 3. Consequently, the gearing ratio would become

$$\frac{1+2}{15} = 20 \text{ per cent.}$$

Among other things, this would make the enterprise look much safer.

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Why it matters

A good time to spot secret reserves is when a company changes from one system of accounting to another. For example, in 1996 Germany's largest bank, the Deutsche Bank, disclosed for the first time financial statements under IFRS as well as under German accounting. The figures for equity were as set out in Table 11.5.

Table 11.5 Deutsche Bank equity (DM million)

Year	*German HGB*	*IAS*	*% increase in quoted value*
1994	21,198	25,875	22.1
1995	22,213	28,043	26.2

So, the analysis of return on net assets or the comparison of debt to equity would have been greatly affected by the disclosure under IFRS of the reserves hidden under conventional German accounting.

11.7 Comparisons of debt and equity

Companies raise finance in several ways. From outside, they can raise funds from their owners by issuing equity securities or from others by issuing debt securities. Loans can also come from a bank. Once in business, finance can come from retaining profits. For external capital raising, some distinctions are pointed out in Table 11.6.

Table 11.6 External finance

	Debt	*Equity*
Where from:	Non-owners	Owners
Payments out:	Interest	Dividend
Amount:	Fixed	Variable
Payment compulsory:	Yes	No
Expense:	Yes	No
Tax deductible expense:	Yes	Not in most countries

Activity 11.G

When preparing the annual report of a company for the year ended 31 December 20X1, the directors generally include information about the dividend that they propose to pay in 20X2 from the profits of 20X1. The Annual General Meeting of the shareholders, held perhaps in March 20X2, needs to vote in favour of the proposal. In several countries (for example, Denmark, the Netherlands and the United Kingdom until 2004), companies include the proposed dividend as a current liability in the 20X1 balance sheet. In other countries (for example, France, Germany, Italy and the United States), companies do not recognize a liability in the 20X1 balance sheet. The size of the proposed dividend could be significant in the context of total current liabilities and in a comparison of the liquidity ratios of companies (see chapter 7). Which is the better practice?

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Feedback In favour of the recognition of a liability is the very high probability that there will be a cash outflow in the near future. That is useful information to analysts of financial statements. In favour of the lack of recognition is the simple point that there seems to be no legal obligation at the balance sheet date, and so there can be no liability. IAS 10, *Events after the Balance Sheet Date*, was revised in 1999 so as to ban recognition of a liability for proposed dividends on equity shares. Information on the proposed dividend can still be given in the notes or elsewhere in the annual report, and it can even be shown on the balance sheet by displaying a part of retained earnings (or profit and loss reserves) as a proposed distribution.

Another complication here is that some securities are superficially equity but actually debt, and some are hybrids: partly equity and partly debt. An example of the first case is where a preference share involves a guaranteed payment on redemption at a fixed date. This seems to meet the definition of a liability. Under IASs 32 and 39 (both relating to financial instruments), the superficial form of an instrument should be overlooked in favour of its underlying substance. In the above case, the dividend payment should also be shown as an interest expense.

For hybrid securities, a whole industry has grown up in recent years, creating various types. Variations on the theme are almost infinite, but the principle usually is that the security is issued in one form, with optional or guaranteed conversion at a later date into another form. For example, debentures may be issued with optional conversion rights into share capital at a predetermined price at some future date. Under IFRS requirements, a convertible debenture would have to be split into part-debt and part-equity.

So far, most countries' rules have not followed these modern IFRS ideas but have retained accounting based on the legal form.

SUMMARY

- Even the definition of 'cash' is ambiguous because money in the bank is usually included, depending on the length of deposit.
- Receivables (or debtors) are valued at the amount realistically expected to be received. Allowances should therefore be made for specific and general bad debts. Such allowances are sometimes – confusingly – called provisions or reserves. Also, the time value of money may need to be taken into account by discounting the amounts receivable.
- Investments have traditionally been divided into 'fixed' and 'current'; but this rests on the intentions of directors, which can change and which are difficult to audit. Cost is usually the basis for valuation, although a lower market value is often taken into account.
- The current value of investments might seem more relevant information than cost and, in some cases, it is reliable. IFRS requirements have moved some way toward market valuation for some investments, but this creates problematic dividing lines between types of investments.
- Liabilities can be divided into 'creditors' and 'provisions'. Both must meet the definition of liability, although provisions need more estimation in their measurement. In the past, and still in some countries, provisions are recorded even though they do not meet the IFRS definition of liability. This creates secret reserves.

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- Equity is the residual of assets net of liabilities, but it can still be split into components. The two basic components are contributions from owners (share capital and share premium) and undistributed gains (various forms of reserves).
- It would be helpful to distinguish clearly between 'provision' (a liability of uncertain amount or timing) and 'reserve' (an element of equity caused by gains). Unfortunately, the words are sometimes used interchangeably, although not in IFRS or UK rules.
- Debt and equity securities are different in a number of ways, but it is possible to disguise one as the other and to create securities with features of both.

References and research

The IASB documents of greatest relevance to the issues of this chapter are:

- IAS 1 (Revised 2003), *Presentation of Financial Statements*.
- IAS 19 (Revised 1998), *Employee Benefits*.
- IAS 32 (Revised 2003), *Financial Instruments: Disclosure and Presentation*.
- IAS 37 (1998), *Provisions, Contingent Liabilities and Contingent Assets*.
- IAS 39 (1998), *Financial Instruments: Recognition and Measurement*.

An English-language paper looking at one of the chapter's topics in a comparative international way is:

- D. Alexander, S. Archer, P. Delvaille and V. Taupin, 'Provisions and contingencies: an Anglo-French investigation', *European Accounting Review*, Vol. 5, No. 2, 1996.

Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

11.1 Receivables are valued at:

(a) The amount prudently expected to be received.
(b) The amount legally due from the debtors.
(c) The amount realizable by selling them to someone else.
(d) Depreciated historical cost.

11.2 Under IFRS rules, investments are valued:

(a) All at cost.
(b) All at lower of cost and market.
(c) All at fair value.
(d) At cost or fair value depending on their nature.

11.3 A provision is:

(a) The recognition of a probable future obligation.
(b) A fund of money and investments.
(c) A liability of uncertain timing or amount.
(d) The recognition of unavoidable future expenses or operating losses.

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11.4 Creditors are:

(a) Non-monetary assets.
(b) Monetary liabilities.
(c) Monetary assets.
(d) Non-monetary liabilities.

11.5 A company might prefer to raise more debt capital rather than equity capital in order to:

(a) Get more owners.
(b) Minimize its tax.
(c) Reduce the risk of bankruptcy.
(d) Reassure its creditors.

11.6 In a rights issue, shares are sold in which way?

(a) New shares are sold to existing shareholders.
(b) Existing shares are sold by some shareholders to others.
(c) Existing debentures are sold to shareholders.
(d) New shares are sold to new shareholders.

11.7 At the end of an accounting period a company calculates the amount of pension expense to be charged. What double entry is required to record this?

(a) Debit provision for pension, credit pension expense.
(b) Debit cash, credit pension expense.
(c) Debit pension expense, credit cash.
(d) Debit pension expense, credit provision for pension.

11.8 Setting up a provision for redundancy costs has the following effects:

(a) Cash rises; income falls.
(b) Income falls; net worth falls.
(c) Cash falls; income rises.
(d) Cash falls; income falls.

11.9 A 'legal reserve' such as operated in Germany and France is designed to:

(a) Protect the shareholders.
(b) Set up a store of cash.
(c) Protect the creditors.
(d) Reduce tax payments.

? Exercises

Feedback on the first two of these exercises is given in Appendix E.

11.1 'All credit balances included in a balance sheet are either capital and reserves, or liabilities actual or estimated.' Discuss.

11.2 'The distinction between a prudent approach to the quantification of provisions on the one hand, and the creation of secret reserves on the other, will always be a matter for human attitude and whim.' Discuss.

11.3 If you owned some listed shares that had just doubled in value, would you say that you had gained and were better off than before?

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11.4 'There is usually no problem with the valuation of receivables because it is clear how much is legally owed to an enterprise.' Discuss.

11.5 What is the definition of a fixed (or non-current) asset? Why is this difficult to use in the context of investments, and why does that matter?

11.6 What uses of the word 'reserve' might be found in practice in various parts of the world?

11.7 Distinguish between debt capital and equity capital, and suggest which is likely to be favoured by a company raising finance in a high-taxation environment.

11.8 How might a company seek to raise extra finance in ways other than issuing new debt or equity securities?

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12

Accounting and taxation

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- outline some of the main ways in which corporate taxation can differ internationally;
- explain the distinction between accounting profit and taxable income;
- discuss some major international differences in the tax base and give simple examples;
- outline the rationale for the recognition of deferred tax assets and liabilities in financial statements;
- calculate amounts of deferred tax for some basic examples.

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12.1 Introduction

12.1.1 Rationale for this chapter

There are several related purposes of studying taxation. First, corporate taxation clearly has some significant effects on net profit figures and on other financial reporting matters. In particular, it has been shown earlier (e.g. in chapter 5) that in some continental European countries the rules relating to the taxation of corporate income have a dominant effect on financial accounting measurement and valuation rules. For example, there is a strong influence of tax rules on depreciation charges on individual company financial statements in Germany; and if asset values are changed on a balance sheet, this generally affects tax liabilities for individual companies in France. By contrast, neither of these two points is true for the United Kingdom.

Second, an understanding of corporate taxation in different countries is a necessary introduction to a study of business finance and management accounting. However, it is often omitted from books on these subjects. Hence there is an introduction here.

Another major topic is how to account for the effects of the differences between the tax rules and the financial reporting rules. This is a major point in those countries where the tax and accounting practices are separated on a number of issues. Further, in any country, for those groups using IFRSs (or US rules) for the preparation of consolidated financial statements, there are likely to be substantial differences between tax and financial reporting. This leads to the topic of deferred tax, which is examined in the fourth section of this chapter.

12.1.2 Separate taxation for companies

In most countries, it has only been within the last hundred years that companies have begun to be treated differently from individuals for the purposes of taxation. However, the question of whether a business is a separate entity from its owner(s) has a long history in the thought and practice of disciplines such as accounting, company law and economics. Italian accountants had decided by the thirteenth century that they wished to separate the business from its owners, so that the owners could see more clearly how the business was doing. Consequently, as examined in chapter 2, balance sheets of businesses show amounts called 'capital' that represent amounts contributed by the owners. During the nineteenth century, various laws were enacted in European countries to the effect that companies have a legal existence independently from their owners, that these companies may sue and be sued in their own names, and that the owners are not liable for the debts of a company beyond their capital contributions. Economists have (in micro-economic theory) extended the separation of the owner from the business. When calculating the profit of the business to a sole trader, for example, economists would include as costs of the business the opportunity costs of the amounts that the owner could have earned with the invested time, the invested property and money if they had been invested outside the business instead.

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As mentioned, it was not until the twentieth century that revenue law (i.e. taxation law) caught up with this separation and that companies began to be taxed in a different way from individuals. As is frequently the case with taxation, changes were associated with the need to finance warfare. In particular, the rearmament of nations before the two World Wars imposed a heavy burden on government finances, which was partly supported by the revenue from taxes on companies.

Another vital point – certainly in EU countries – is that tax is calculated on the basis of individual legal entities called companies; it is not calculated on the basis of groups of companies, although in particular circumstances groups are allowed to pass losses or dividends around. This means that consolidated financial statements (as introduced in chapter 4 and taken further in chapter 14) are not generally relevant for the purposes of taxation.

This chapter is concerned with the taxation of corporate income, which is the major corporate tax in most countries. However, there are other taxes on corporations in Europe: on property, on share capital, on payroll numbers, and so on.

12.1.3 International differences in taxes

Three major types of difference between corporate income taxes might be called tax bases, tax systems and tax rates.

First, it should be noted that the international differences in corporate income tax bases (or definitions of taxable income) are very great. Although in all countries there is some relationship between accounting income and taxable income, in most continental European countries the relationship is much closer than it is in the United Kingdom and the United States (see chapter 5). Further, it has been pointed out throughout this book that the underlying measurement of accounting income itself varies substantially by country. These two points, which are of course linked, mean that similar companies in different countries may have vastly different taxable incomes.

The second basic type of difference lies in tax systems. Once taxable income has been determined, its interaction with a tax system can vary, in particular with respect to the treatment of dividends. Corporations may have both retained and distributed income for tax purposes. If business income is taxed only at the corporate level and only when it is earned, then different shareholders will not pay different rates of personal income tax. If income is taxed only on distribution, taxation may be postponed indefinitely. On the other hand, if income is taxed both when it is earned and when it is distributed, this creates *economic double taxation*, which could be said to be inequitable and inefficient.

For the third major international difference, namely on tax rates, there tend to be frequent changes. There is a brief section on this later in the chapter.

These differences in tax bases, tax systems and tax rates could lead to several important economic effects: for example, on dividend policies, investment plans and capital-raising methods. Such matters are not dealt with here. Neither are the important issues of transfer pricing within groups and international double taxation that, in practice, help to determine taxable profits and tax liabilities.

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The taxation of businesses is a very complex area, particularly when a business operates in more than one country. This chapter is only able to introduce some of the issues and therefore leaves out much of the detailed complexity. One complication is that the legal types of businesses differ from country to country, as does the scope of particular business taxes. This chapter deals mainly with companies that can clearly be seen as separate from their owners for tax purposes.

Further international differences arise in the timing of the payment of taxes. For example, in some countries, corporate taxes are paid on a quarterly basis using estimates of taxable income for the year. In other countries, taxes are paid many months after the accounting year end – after the profit figures have been calculated and audited. In many continental countries taxes are not finally settled until a tax audit, which may be some years later.

In some countries, e.g. Italy and Germany, there are regional as well as national corporate income taxes. Both these taxes generally use a similar tax base, but the composite tax rate is, of course, higher.

12.2 International differences in the determination of taxable income

12.2.1 Introduction

The obvious way to classify corporate income taxation bases is by degrees of difference between accounting income and taxable income. As should be clear from chapter 5, the influence of taxation on accounting varies internationally from the small in the United Kingdom to the dominant in Germany. Such is the importance of this difference for accounting that a simple classification of tax bases would look much like a simple classification of accounting systems (see chapter 5). For example, a two-group classification in either case might put Denmark, the Netherlands, the United Kingdom and the United States in one group, and France, Germany and Japan in the other.

In the first of these groups, many adjustments to accounting profit are necessary in order to arrive at the tax base, namely taxable income. In the other group, the needs of taxation have been dominant in the evolution of accounting and auditing. Consequently, the tax base corresponds closely with accounting profit. As discussed in many places in this book, several of these continental European countries began in the late 1980s to de-couple accounting from tax rules. More recently, the impact of increasing globalization of the finance market and the rise in the influence of the IASB have accelerated this process, especially as regards consolidated financial statements. If a German company, for example, uses IFRSs for its consolidated financial reporting, this creates many significant differences between its financial reporting and the way that taxation works in Germany.

Some of the differences in tax bases are discussed below; in a few cases this summarizes the coverage of topics elsewhere in the book. There is a concentration here on four EU countries, but these should be taken as examples of how the calculation of taxable income can differ.

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12.2.2 Depreciation

Naturally, all the countries studied in detail in this book have tax authorities that take an interest in the amount of depreciation charged in the calculation of taxable income. This concern varies from fairly precise specification of the rates and methods to be used (as in most countries), to an interference only where charges are unreasonable (as in the Netherlands). As has been pointed out in earlier chapters, the vital difference for financial reporting is that tax depreciation must usually be kept the same as accounting depreciation in Franco-German countries, but not under Anglo-Dutch accounting.

Examples of the specification of rates and methods for depreciation of fixed assets for tax purposes are shown below:

1. In the United Kingdom for large companies for 2003/4, machinery is depreciated at 25 per cent per annum on a reducing balance basis, and industrial buildings are depreciated at 4 per cent per annum on cost. There is a complete separation of this scheme of 'capital allowances' from the depreciation charged by companies against accounting profit. Unlike other countries, the United Kingdom does not give any depreciation tax allowance for most commercial buildings.
2. In the Netherlands, depreciation is determined by individual companies. Straight-line depreciation may be used for any asset, and the reducing balance method for all assets except buildings. Companies may change from one method to another if there are good business reasons. A typical rate for plant is 12 per cent.
3. In France, depreciation is allowed by tax law on a straight-line basis for nearly all assets at the following rates: industrial and commercial buildings, 5 per cent; office or residential buildings, 4 per cent; plant and fixtures, 10–20 per cent; vehicles, 15–25 per cent. It is possible to use a reducing balance basis for plant. The rates to be used are expressed as multiples of the straight-line rates depending on the asset's life. It is possible to change the basis. Accelerated depreciation is allowed for R&D, certain regions, anti-pollution and energy-saving assets.
4. In Germany, maximum tax depreciation rates are specified by tax law. Straight-line and reducing balance are available, except that straight-line is mandatory for buildings. The following rates apply in Germany: buildings, 4 per cent; plant, 10 per cent; office equipment, 20 per cent; office furniture, 10 per cent; vehicles, 20–25 per cent. It is possible to change methods only from reducing balance to straight-line. Accelerated allowances have been available for assets in certain areas and for certain assets.

12.2.3 Capital gains

Capital gains are increases in the value of fixed assets above their cost. They are taxed at the point of sale. The taxation of capital gains varies substantially by country. In the United Kingdom, the Netherlands and Germany, capital gains are added to taxable income in full. In France, short-term capital gains (defined as for periods less than two years) are fully taxed, but long-term capital

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gains are taxed at a reduced rate. The degree to which taxation on a gain can be postponed by buying a replacement asset (known as *roll-over relief*) also varies internationally.

12.2.4 Dividends received

The degree to which the dividends received by a company must be included has an important effect on its taxable income. In the United Kingdom, domestic dividends are generally not taxed in the hands of a recipient company. In the Netherlands, if a company holds at least 5 per cent of the shares in another, this relieves dividends from tax. In France, dividend income is fully taxed unless there is a holding of at least 5 per cent. In Germany, dividends are fully taxable, except that an integrated structure for tax purposes can be used under certain conditions.

12.2.5 Losses

Different treatment of losses can have important effects on taxable profits. Depending on the country, losses can be carried back or carried forward to be set against past or future profits. Examples of these are in Table 12.1.

Table 12.1 Operating loss reliefs (years)

Country	*Carry back*	*Carry forward*
United Kingdom	1	No limit
Netherlands	3	No limit
France	3	5
Germany	2	No limit

12.2.6 Expenses

In the United Kingdom and the Netherlands, a number of expenses deducted in the calculation of profit may not be allowed in the calculation of taxable income. For example, in the United Kingdom, adjustments are made to disallow expenses of entertainment, gifts to customers, and expensive cars. In France and Germany, what is deducted for financial accounting generally depends on what is allowed for tax purposes.

12.2.7 Interest

Dividends paid are not tax-deductible in most systems, and of course nor are they considered to be expenses in the calculation of accounting profit. By contrast, interest payments are usually expenses for both accounting and tax purposes. Dividends are a share of post-tax profit paid to the owners of the company, whereas interest is a fixed payment that *must* be paid to outside lenders of money. Consequently, under most types of system, paying out €2,000 in interest is less expensive for the company in post-tax terms than paying out €2,000 in cash

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dividends, because the former payment reduces tax by €660 (assuming, for example, a corporation tax rate of 33 per cent). On the other hand, as shown below, €1,400 of cash dividends would be worth as much to an individual in some tax systems as €2,000 of gross interest. This is because, although both incomes are taxed, the dividends might receive a tax credit. The example shown in Table 12.2 assumes a corporation tax rate of 33 per cent, and a rate of withholding tax and tax credit based on an income tax rate of 30 per cent.

Table 12.2 Comparing the effect of payments of dividends and interest on the tax: an example

	Dividend payment €	*Interest payment* €
Net profit before interest and tax	10,000	10,000
less Interest (1,400 net, 600 income tax withheld at source)	–	2,000
Net profit before tax	10,000	8,000
less Tax at 33 per cent	3,300	2,640
Net profit after tax	6,700	5,360
Dividend[a]	1,400	–
Retained profit	5,300	5,360

[a] Equivalent to €2,000 because of a tax credit of €600

12.2.8 Other taxes

A very important complicating factor in determining overall tax burdens is the existence of other types of tax on companies and the degree of their deductibility for national corporate income tax purposes. In many countries there is some form of payroll tax or social security tax. In the United Kingdom there are local property 'rates'. In Germany there are regional income taxes, capital taxes and payroll taxes. In France there is a business licence tax. In general, these taxes are deductible in the calculation of national corporation tax. However, because of these taxes, the total tax burden is much higher than might be thought at first sight in countries such as Germany, where regional taxes are also important.

12.3 Tax rates and tax expense

Tax rates on corporate taxable income differ greatly around the world, and they change from year to year. There is a general trend in the world for tax rates to fall. Table 12.3 shows tax rates in the European Union for a particular period (2002/3), but already rates have fallen in some countries.

The amount of corporate income tax payable by a company is calculated by multiplying the taxable income (see section 12.2) by the tax rate. When the tax is paid, it will be recorded in the cash flow statement as a use of cash.

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Table 12.3 EU corporation tax rates in 2002/3

Country	*Tax rate per cent*[a]
Austria	33
Belgium	40[b]
Denmark	30
Finland	29
France	36.33
Germany	35[c]
Greece	40[d]
Ireland	12.5
Italy	34[e]
Luxembourg	22[f]
Netherlands	34.5
Portugal	30
Spain	35
Sweden	28
United Kingdom	30[g]

Notes:
[a] Withholding taxes have been ignored throughout.
[b] This includes a 3 per cent austerity surcharge.
[c] Including a solidarity charge of 7.5 per cent of the tax. There is also a business tax.
[d] 35 per cent for listed companies.
[e] This includes a regional tax.
[f] Including business and net worth taxes.
[g] There is a lower rate for companies with small profits.

The calculation of the expense in the income statement is complicated by the issue of deferred taxation, which is dealt with in the next section. However, the *presentation* of tax expense in the income statement is straightforward and can be described here.

The tax expense is of sufficient importance that it is nearly always disclosed as a separate figure in an income statement. It is generally shown after other expenses and before dividends, although the exact location varies. This, and the effect of tax on the interpretation of financial statements, has been referred to in chapter 7, and is looked at again in Part 3.

Particularly in countries where there is a strong separation of accounting from tax, the location of figures above or below the tax line in an income statement is not a reliable guide as to whether an item affects the actual tax bill.

12.4 Deferred tax

The topic of deferred tax is one in which there are major international differences in accounting. Deferred tax is *not* amounts of tax bills that the tax authorities have allowed the taxpayer to postpone. Accounting for deferred tax is the recognition of the tax implied by the valuations of the assets and liabilities included in the balance sheet.

A simple example of deferred tax would occur in the context of a revaluation of fixed assets. Suppose that a Dutch company revalues a holding of land in the

balance sheet from €3 million to €9 million. Suppose, also, that the Dutch corporate tax rate on capital gains is 35 per cent, but that the Dutch tax rules do not tax capital gains until disposal, which in this case is not intended by the company in the foreseeable future. No tax is payable as a result of revaluing, but it is possible to see how accountants might think that the potential liability to tax of €2.1 million (i.e. €6 million revaluation × 35 per cent) relates to the period up to the balance sheet date. If so, they might account for the implicitly deferred tax in the balance sheet, as in Table 12.4. Since the revaluation is not realized, there will be no gain or tax on the gain in the income statement.

Table 12.4 Deferred tax on revaluation

Balance sheet adjustments for Dutch company (€m)	
Fixed asset: + 6.0	
	Revaluation reserve: + 3.9
	Deferred tax: + 2.1

In the above example, the €6 million of revaluation that is not yet relevant for tax purposes is called a 'temporary difference' under IASB (or US) rules. Under IAS 12, enterprises should account for deferred tax on temporary differences at current tax rates. A temporary difference is the difference between the carrying value of an asset or liability for financial reporting purposes and its value as recorded in the tax records. In the above example of the Dutch land, the financial reporting carrying value was €9 million and the tax value was €3 million. So, the temporary difference was €6 million.

Under German rules, upward revaluation is not possible. In several other continental countries, revaluation is legal but would lead to current taxation. Consequently, in most continental countries, deferred tax would not arise in such a case. However, if a German, French, etc. group is using IFRS rules in its consolidated statements, the issue could arise in these countries because accounting practices would depart from tax rules.

The most frequently cited cause of substantial amounts of deferred tax in Anglo-Saxon countries is depreciation. Depending on the industry sector, depreciation can be a large expense, and the tax rules can be substantially different from the accounting rules, as outlined in section 12.2. Table 12.5 sets out a simple case, where there are 100 per cent tax depreciation allowances in the year

Table 12.5 Depreciation and tax

Accounting records		*Tax calculations*		
Year	*Depreciation*	*Year*	*Expense*	*Tax reduction*
1	2,000	1	10,000	5,000
2	2,000	2	0	0
3	2,000	3	0	0
4	2,000	4	0	0
5	2,000	5	0	0

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of purchase of plant and machinery; a 50 per cent corporate income tax rate; the purchase for €10,000 of a machine that is expected to last for five years; and a country where tax and accounting are separated. The existence of 100 per cent tax depreciation is not fanciful. This applied for all plant and machinery in the United Kingdom from 1972 to 1984, to certain assets in West Berlin until the end of the 1980s, to capital investments in certain Greek islands, and on other occasions. The example would work, of course, with the less extreme tax allowances that are common in Europe.

In the example in Table 12.5, the accountants assume that the asset will have no residual value and will wear out evenly over time, irrespective of use. Consequently, for accounting purposes, they charge a depreciation expense of €2,000 per year. By contrast, the tax authorities allow an expense of €10,000 in the first year and, if the company takes this, no tax-deductible expense after the first year. Consequently, there is a reduction in the tax bill of €5,000 in year 1. This cash-flow advantage is designed to be the incentive to invest.

Supposing that the company in our example uses the new asset very inefficiently or does not use it at all in the first year, in this case depreciation may still be charged because the asset is depreciating due to the passing of time. The net effect of the inefficient capital purchase on the post-tax accounting profit of year 1 appears to be that the profit *increases* by €3,000 (i.e. depreciation expense of €2,000, and tax reduction of €5,000). Of course, if the company uses the asset effectively, profit will increase by more than this, as the company should at least be able to earn enough by using the asset to cover the depreciation on it.

The above strange effect on profit is caused by deliberately charging the depreciation expense slowly but taking the tax reduction immediately. However, so far no account has been taken of deferred tax. In order to do so, under IAS 12, it is necessary to calculate the temporary difference. This, as explained earlier, is the difference between the financial reporting carrying value of the asset and its tax value. In the case of the depreciating machine at the end of year 1, the financial reporting carrying value is cost less depreciation = €8,000, whereas the tax value is zero because there is full depreciation for tax purposes. So, there is a temporary difference of €8,000 and (at the tax rate of 50 per cent) a deferred tax liability of €4,000.

The double entry to give effect to deferred tax accounting in this case would be a debit entry under Tax expense of €4,000, and a credit entry under Deferred tax liability of €4,000. Then the profit for year 1 would *decrease by* €1,000 (i.e. an extra depreciation expense of €2,000, an actual tax reduction of €5,000, but a deferred tax expense of €4,000) as a result of buying the asset and not using it. This is a more reasonable profit figure to present.

Activity 12.A

A company commences trading in year 1, and purchases fixed assets in year 1 costing €20,000, in year 2 costing €8,000, in year 3 costing €10,000, in year 4 costing €12,000 and in year 5 costing €14,000. All fixed assets are depreciated for financial reporting purposes at 10 per cent per annum on cost. Tax depreciation of 25 per cent per annum on the reducing balance is available. The tax rate throughout is 30 per cent.

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Complete the following table, to show the annual balance sheet figures for cumulative fixed assets in (a) the accounting records and (b) the tax records, and the temporary differences at each balance sheet date, in accordance with IAS 12. Year 1 is already done for you, as shown in Table 12.6.

Table 12.6 Deferred tax calculation (Year 1)

Year	*1*	*2*	*3*	*4*	*5*
	€	€	€	€	€
(a) *Accounting balances*					
Asset balance 1 January	—				
Additions	20,000				
Depreciation	2,000				
Balance 31 December	18,000				
(b) *Tax balances*					
Asset balance 1 January	—				
Additions	20,000				
Tax depreciation	5,000				
Balance 31 December	15,000				
Temporary differences	3,000				
Deferred tax balance	900				

Feedback The completed table should be as shown in Table 12.7. Taking year 2 as an example, the accounting depreciation is €2,800 (10 per cent of total cost of €28,000). The tax depreciation is €5,750 (25 per cent of net balance of €23,000). The temporary difference between accounting asset balance and tax asset balance is €5,950 (€23,200–€17,250) and the deferred tax liability, provided in full under the liability basis as IAS 12 requires, is €1,785 (30 per cent × €5,950). In year 2 the deferred tax liability has therefore increased from €900 to €1,785, requiring an addition of €885 to the tax charge in the income statement for that year. The figures for the other years are calculated similarly.

Table 12.7 Deferred tax calculation (Years 1–5)

Year	*1*	*2*	*3*	*4*	*5*
	€	€	€	€	€
(a) *Accounting balances*					
Asset balance 1 January	—	18,000	23,200	29,400	36,400
Additions	20,000	8,000	10,000	12,000	14,000
Depreciation	2,000	2,800	3,800	5,000	6,400
Balance 31 December	18,000	23,200	29,400	36,400	44,000
(b) *Tax balances*					
Asset balance 1 January	—	15,000	17,250	20,437	24,328
Additions	20,000	8,000	10,000	12,000	14,000
Tax depreciation	5,000	5,750	6,813	8,109	9,582
Balance 31 December	15,000	17,250	20,437	24,328	28,746
Temporary differences	3,000	5,950	8,963	12,072	15,254
Deferred tax balance	900	1,785	2,690	3,632	4,576

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We have now seen two examples of the possible causes of deferred tax: a revaluation of assets that is not taken into account by the tax system, and depreciation running at a faster rate for tax than for accounting. Other examples would include:

- the capitalization of leases (under IAS 17), if the tax system still treats them as operating leases,
- taking profits on long-term contracts as production proceeds (under IAS 11), if the tax system only counts profits at completion.

In order to account for deferred tax under IAS 12, it is necessary to look at the values of all the assets and liabilities in the balance sheet and compare them to the tax values that would apply. Large numbers of temporary differences and resulting deferred tax assets and liabilities can arise.

Why it matters *Particular care needs to be taken when carrying out ratio analysis, as discussed in chapter 7, regarding the treatment of deferred taxation. The balance sheet figures – probably for liabilities, and possibly for assets – will be affected by deferred tax practices. After-tax earnings will also be affected, as Activity 12.A showed, and so will shareholders' equity. This affects a lot of ratios, such as earnings per share, gearing, and return on equity. As already suggested, it cannot be assumed that IAS 12 is being fully and consistently followed across countries and over past periods, although harmonization should increase in the future.*

SUMMARY

- Corporate taxation is a major influence on some countries' financial accounting practices. A knowledge of corporate taxation is important for international business finance.
- Tax bases for corporate income tax differ in their treatment of depreciation, capital gains, losses, dividends received, certain expenses and many other matters. The importance of taxes other than national corporate income taxation also varies.
- Tax rates also vary greatly internationally, and alter frequently.
- Deferred taxation is a major accounting topic in those countries where there can be substantial differences between taxable income and accounting profit. It also becomes major where a company uses IFRSs for its consolidated statements and therefore moves its accounting away from that which would be used under national taxation rules. Practice varies within those countries, although IAS 12 is likely to have a harmonizing influence over the coming years.

References and research

The relevant standard for the aspect of international accounting dealt with in this chapter is:

- IAS 12, *Income Taxes*.

The best starting point for a European exploration is a special edition of the *European Accounting Review*: Vol. 5, Supplement, 1996. It includes the following papers, all with further references.

- M. N. Hoogendoorn, 'Accounting and taxation in Europe – A comparative overview'.

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- K. Artsberg, 'The link between commercial accounting and tax accounting in Sweden'.
- M. Christiansen, 'The relationship between accounting and taxation in Denmark'.
- A. Eilifsen, 'The relationship between accounting and taxation in Norway'.
- A. Frydlender and D. Pham, 'Relationships between accounting and taxation in France'.
- M. N. Hoogendoorn, 'Accounting and taxation in the Netherlands'.
- M. Järvenpää, 'The relationship between taxation and financial accounting in Finland'.
- A. Jorissen and L. Maes, 'The principle of fiscal neutrality: the cornerstone of the relationship between financial reporting and taxation in Belgium'.
- M. Lamb, 'The relationship between accounting and taxation: The United Kingdom'.
- D. Pfaff and T. Schröer, 'The relationship between financial and tax accounting in Germany – the authoritativeness and reverse authoritativeness principle'.
- F. Rocchi, 'Accounting and taxation in Italy'.

In addition, the following are recommended as further reading:

- S. James and C. Nobes, *The Economics of Taxation* (Harlow: Financial Times, Prentice Hall, 2000).
- M. Lamb, C. Nobes and A. Roberts 'International variations in the connections between tax and financial reporting', *Accounting and Business Research*, Summer 1998.

? Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

12.1 Companies are seen as separate from their owners:

(a) Legally but not for other purposes.
(b) Legally and for financial reporting, but not for tax.
(c) For legal, reporting and tax purposes.

12.2 In financial statements prepared under which regulatory system are the most significant amounts of deferred tax liability likely to be found?

(a) German system.
(b) French system.
(c) Italian system.
(d) IASB system.

12.3 Deferred tax can best be described as:

(a) Tax bills due in more than one year.
(b) Amounts only likely to be paid when the company ceases to operate.
(c) Tax implied by asset and liability valuations in the balance sheet.
(d) An interest-free loan from government.

12.4 In which one of the following national systems are depreciation charges most closely tied to tax rules?

(a) United States.
(b) United Kingdom.
(c) Germany.
(d) Netherlands.

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12.5 In Germany or France, deferred tax balances are likely to be largest for:

(a) An individual company's balance sheet following national accounting rules.
(b) An individual company's balance sheet following international accounting standards.
(c) A group's consolidated balance sheet following national accounting rules.
(d) A group's consolidated balance sheet following international accounting standards.

12.6 The book value of a depreciating tangible fixed asset is 200 in the financial statements on 31 December 20X1. The tax value is 80 on the same date. The tax rate is 40 per cent. What deferred tax balance should be recorded in the balance sheet for this?

(a) A credit balance of 48 (i.e. deferred tax liability).
(b) A debit balance of 48 (i.e. deferred tax asset).
(c) It depends on the tax rate ruling when the asset was purchased.

12.7 The same information as in Question 12.6 applies to this question plus the following: the book value of the tangible fixed asset is 180 in the financial statements on 31 December 20X2; and the tax value is 60 on 31 December 20X2. Which of the following now applies?

(a) The balance of deferred tax at 31 December 20X2 is unchanged from that of 31 December 20X1.
(b) The balance of deferred tax at 31 December 20X2 should be reduced by 8 from that of 31 December 20X1.
(c) The balance of deferred tax at 31 December 20X2 should be increased by 8 from 31 December 20X1.

Exercises

Feedback on the first two of these exercises in given in Appendix E.

12.1 In which countries does taxation tend to have a major influence on published company accounts? Discuss how this influence takes effect and what the position is regarding the treatment of taxation in *consolidated* accounts.

12.2 A company has a group of fixed assets that are summarized in its accounting records as shown in Table 12.8.

Table 12.8 Summarized fixed assets

Year	*1*	*2*	*3*	*4*
	€	€	€	€
(a) *Accounting balances*				
Asset balance 1 January	10,000	13,200	17,550	22,095
Additions	5,000	6,000	7,000	—
Depreciation	1,500	1,950	2,455	2,210
Balance 31 December	13,500	17,550	22,095	19,885

For tax purposes the asset balance brought forward on 1 January of year 1 is €7,000. Tax depreciation is available at the rate of 20 per cent per annum on the reducing balance basis. The tax rate is 30 per cent in years 1 and 2 but falls to 20 per cent in years 3 and 4.

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Prepare a tabular summary of the tax balances relating to this group of assets over the four years of the example, calculate deferred tax balances for each of the four years, and show the effect of deferred tax on the income statement for years 2, 3 and 4.

12.3 In Activity 12.A, the balance on the deferred tax liability account is growing every year over the five-year period, and if tax conditions remain stable and annual investment continues to rise, then it will continue to grow. Could it be argued that, because the liability seems not to be leading to an outflow of resources, it fails to meet the IASB definition of a liability?

12.4 Explain the concept of a 'temporary difference' in the context of IASB rules. Why is it thought necessary to account for deferred tax on these differences?

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13

Cash flow statements

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- explain the reasons for publishing cash flow statements;
- describe the main elements of a cash flow statement in accordance with IAS 7;
- explain and illustrate the direct and indirect methods for deriving cash flows from operating activities;
- prepare simple cash flow statements from given data, consistent with IAS 7;
- comment on the meaning of the numbers in simple cash flow statements.

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13.1 Introduction

We briefly explored the idea of cash flow statements at the end of chapter 2 and in section 6.4. As a reminder, try the following activity.

Activity 13.A

Why are cash flow statements an important element in annual published financial statements, and how do the IASB's rules and national laws based on the EU Fourth Directive influence their content and presentation?

Feedback The simple answer to why cash flow statements are important is that adequate liquidity and the availability of cash are vital to the successful operation of a business enterprise. The income statement and balance sheet do not provide adequate information about these factors, because the accrual basis of accounting is focused on revenues and expenses. Thus the matching principle relates earnings with consumption, not receipts with payments, and a business may be profitable but at the same time have severe cash shortages. Cash flow statements, which are not based on the accruals convention, focus on cash movements over the reporting period and therefore facilitate prediction of possible or likely cash movements in the future.

The EU Fourth Directive makes no mention of cash flow statements of any kind. This is a function of its origins, as discussed in Part 1 of this book, in an era before such statements were common. Thus, most national laws within the EU are also silent on this matter. The IASB, on the other hand, has issued IAS 7 (*Cash Flow Statements*). This, or national standards like it, are the basis for most practice internationally.

Why it matters

It is important to remember that the traditional accounting process is an uncertain and complex process. Not only is profit determination complex but it is potentially misleading. In any accounting year, there will be a mixture of complete and incomplete transactions. Transactions are complete when they have led to a final cash settlement and these complete transactions cause no profit-measurement difficulties. Considerable problems arise, however, in dealing with incomplete transactions, where the profit or loss figure can only be estimated by valuing assets and liabilities at the balance sheet date or by means of the accruals concept, whereby revenue and costs are matched with one another so far as their relationship can be established or justifiably assumed, and they are dealt with in the income statement of the period to which they relate.

A statement that focuses on changes in cash and other liquid assets rather than on profits has two potential advantages. First, it provides different and additional information on movements and changes in net liquid assets, which assists appraisal of an enterprise's progress and prospects; and, second, it provides information that is generally more objective (though not necessarily more useful*) than that contained in the income statement.*

Activity 13.B

Opinion has varied sharply in the last three decades on exactly what aspect of 'liquidity' should best be focused on in published financial statements. Consider the two balance sheet extracts from A Co., as shown in Table 13.1, which focus on working capital, i.e. on net current assets.

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Table 13.1 Balance sheet extracts for A Co.

	000s 31.12.X1	000s 31.12.X2
Inventory	4,600	4,300
Accounts receivable	1,300	2,600
Cash and bank	2,500	1,200
	8,400	8,100
Accounts payable	7,900	6,500
Working capital	500	1,600

Identify the change in position.

Feedback If we look solely at cash, we could state that A had experienced a decrease in cash of 1,300,000 over the year. On the other hand, looking at working capital (or net current assets) indicates an increase of 1,100,000 over the year. It is debatable which figure the users of financial statements should have regard to when taking decisions. A narrow (cash) definition of liquidity shows a movement in one direction and a broader (working capital) definition of liquidity shows a movement in the opposite direction.

Practice through the 1970s and beyond was generally focused on working capital, i.e. on the current assets and current liabilities. The original IAS 7, before a revision in 1992, reflected this preference, referring to funds flow rather than to cash flow. Now, however, the focus is much more closely on cash. More strictly, it is changes in both cash and cash equivalents, i.e. those items that are so liquid as to be 'nearly cash', that are analyzed. IAS 7 defines what it means by 'nearly' carefully and precisely, but different national systems will have different views on this element.

IAS 7 is uncompromising in that it applies to all enterprises. It requires that a cash flow statement is presented as an integral part of all sets of financial statements.

13.2 An outline of the IAS 7 approach

IAS 7 cash flow statements distinguish cash flows under three headings: operating activities, investing activities and financing activities. The standard defines these as follows:

- *Operating activities* are the principal revenue-producing activities of the enterprise, and other activities that are not investing or financing activities.
- *Investing activities* are the acquisition and disposal of long-term assets and other investments not included in cash equivalents.
- *Financing activities* are activities that result in changes in the size and composition of the equity capital and borrowings of the enterprise.

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The concept of cash equivalents requires further clarification. Cash equivalents are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes. For an investment to qualify as a cash equivalent it must be readily convertible to a known amount of cash and be subject to an insignificant risk of changes in value. Thus, an investment normally qualifies as a cash equivalent only when it has a short maturity of, say, three months or less from the date of acquisition.

This means that a cash equivalent must meet both of two criteria, i.e.

(a) it has a short maturity 'of, say, three months or less'; and
(b) it is held to meet short-term cash requirements, not for investment or other purposes.

Bank borrowings are generally considered to be financing activities. However, in some countries, bank overdrafts that are repayable on demand form an integral part of an enterprise's cash management. In these circumstances, bank overdrafts are included as a component of cash and cash equivalents.

It should not be assumed that 'cash and cash equivalents' are interpreted identically in different countries. For example, in the United States the definition of cash equivalents is similar to that in IAS, but under US GAAP the changes in the balances of overdrafts are classified as financing cash flows rather than being included within cash and cash equivalents. Under the UK standard, cash is defined as cash in hand and deposits receivable on demand (up to 24 hours' notice), less overdrafts repayable on demand. Cash equivalents are not included in the total to be reconciled to, but are dealt with under other headings.

Because the IAS definition of cash equivalents is somewhat subjective, enterprises from other countries that report under IAS may interpret the definition differently, in accordance with local cultures and characteristics.

Cash flows from operating activities are primarily derived from the principal revenue-producing activities of the enterprise. Therefore, they generally result from the transactions and other events that enter into the determination of net profit or loss. However, all cash flows from the sale of productive non-current assets, such as plant, are cash flows from investing activities.

It follows from the above, of course, that the nature of the business, i.e. of the principal revenue-producing activities, may differ significantly from one business to another, in which case the implications of apparently similar transactions may also differ. For example, an enterprise may hold securities and loans for dealing or trading purposes, in which case they are similar to inventory acquired specifically for resale. Therefore, cash flows arising from the purchase and sale of dealing or trading securities are classified as operating activities. Similarly, cash advances and loans made by financial institutions such as banks are usually classified as operating activities since they relate to the main revenue-producing activity of that enterprise.

It is worth emphasizing that reference to the definitions of operating, investing and financing activities given earlier makes it clear that any principal revenue-producing activity that is not a financing or investing activity, as defined, is automatically an operating activity.

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Investing activities consist essentially of cash payments to acquire, and cash receipts from the eventual disposal of, property, plant and equipment and other long-term productive assets. Financing activities are those relating to the size of the equity capital, whether by capital inflow or capital repayment, or to borrowings (other than any short-term borrowings accepted as cash equivalents). Note that interest paid and dividends paid could be interpreted as either operating or as financing activities. Similarly, interest and dividends received could be treated as either operating or investing. Taxes paid are generally to be shown as operating flows.

13.3 Reporting cash flows from operating activities

Enterprises are allowed to use either of two methods to analyze and report cash flows from operating activities. These are:

(a) the direct method, whereby major classes of gross cash receipts and gross cash payments are disclosed; or
(b) the indirect method, whereby net profit or loss is adjusted for the effects of transactions of a non-cash nature, for any deferrals or accruals of past or future operating cash receipts or payments, and for items of income or expense associated with investing or financing cash flows.

IAS 7 encourages enterprises to report cash flows from operating activities using the direct method, but this is not a requirement. The indirect method takes reported net profit and removes non-cash items included in the calculation of that profit figure. The indirect method thus undoes the effects of the accrual basis. The direct method, in contrast, is in effect a directly analyzed summary of the cash book. As such, the direct method provides information that may be useful in estimating future cash flows and that is not available under the indirect method.

The workings of, and differences between, the two methods are best shown by example, as in Tables 13.2 and 13.3.

Table 13.2 Illustration of calculation of cash flow from operating activities by the direct method

Item	€
Cash received from customers	144,750
Cash paid to suppliers and employees	(137,600)
Cash dividend received from associate	900
Other operating cash receipts	10,000
Interest paid in cash	(5,200)
Taxes paid	(4,500)
Net cash provided (used) by operating activities	8,350

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Table 13.3 Illustration of calculation of cash flow from operating activities by the indirect method

Item	€	€
Net income		8,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	8,600	
Provisions for doubtful accounts receivable	750	
Provision for deferred income taxes	1,000	
Undistributed earnings of associate	(2,100)	
Gain on sale of equipment	(2,500)	
Payment received on instalment sale of product	2,500	
Changes in operating assets and liabilities:		
Increase in accounts receivable	(7,750)	
Increase in inventory	(4,000)	
Increase in accounts payable	3,850	
Total adjustments to net income		350
Net cash provided (used) by operating activities		8,350

A comparison of the two tables makes it clear that the indirect method is at the same time more complicated for the reader, and less informative in terms of actual cash flows, than the direct method. As noted above, IAS GAAP encourages – but does not require – the use of the direct method, and the same applies in US GAAP. However, the UK standard requires the indirect method, on the grounds that the benefits to users of the direct method are outweighed by the costs of preparing it, and that consistent practice is desirable. If one takes a user rather than a preparer perspective, it is difficult to support the UK view on this point. In practice, the indirect method seems generally widely used.

13.4 The preparation of cash flow statements

A cash flow statement prepared by the indirect method is in essence a reconciliation between the opening and closing cash and cash equivalents over the accounting period. A convenient way to begin to explore the practicalities of this is to determine the differences between opening and closing balance sheets. These differences can then be analyzed and presented in the desired format, segregating the inflows from the outflows.

Table 13.4 shows summarized balance sheets for the years X1 and X2, and columns for difference, outflow and inflow. The last two columns are left blank for the moment.

Activity 13.C

Complete the blank columns in Table 13.4. You will need to think carefully about this. Some of the items are more straightforward than others. Remember that depreciation is an expense, not a cash movement; but note that the depreciation for the year will have reduced the increase in retained profits.

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Table 13.4 Balance sheet differences: (1) basic information

Item	*X1*	*X2*	*Difference*	*Outflow*	*Inflow*
Fixed assets – cost	94	140	+46		
less depreciation	(22)	(30)	−8		
Inventory	12	16	+4		
Debtors	18	40	+22		
Cash	10	4	−6		
	112	170			
Share capital	70	76	+6		
Retained profits	24	30	+6		
Debentures	0	20	+20		
Creditors	18	44	+26		
	112	170			

Feedback The result should be as shown in Table 13.5.

Table 13.5 Balance sheet differences: (2) inflows and outflows

Item	*X1*	*X2*	*Difference*	*Outflow*	*Inflow*
Fixed assets – cost	94	140	+46	46	
less depreciation	(22)	(30)	−8		8
Inventory	12	16	+4	4	
Debtors	18	40	+22	22	
Cash	10	4	−6		6
	112	170			
Share capital	70	76	+6		6
Retained profits	24	30	+6		6
Debentures	0	20	+20		20
Creditors	18	44	+26		26
	112	170		72	72

It is important that the logic of Table 13.5 is fully understood. Fixed assets have increased, i.e. money has been spent on buying new ones. This clearly represents a cash outflow. The argument concerning depreciation is rather more complicated. Depreciation is merely the allocation of cost over different accounting periods and, of itself, involves no money flows at all. However, the depreciation charge for the year (of 8 in our example) will have been deducted from the profit for the year, and the net cash inflow from operating will therefore be understated by this non-cash-flow-related charge. It is in this sense that the depreciation charge for the year has the effect of increasing the calculated cash inflows.

As regards the inventory difference, the money tied up in closing inventory has increased by 4, and so an outflow of 4 has been necessary to finance this extra amount. With debtors, the enterprise is owed 22 more than before, i.e. it has received 22 less than a constant debtors figure would indicate – again having the effect of an outflow (strictly, perhaps, a negative inflow). The reduction in the cash balance of 6 is the balancing number.

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The remaining items are fairly straightforward. Share capital has increased, logically by the sale of shares creating a cash inflow. Annual profits will in principle cause net cash inflows. The issue of debentures clearly creates a cash inflow of the amount borrowed. An increase in creditors, of 26, is equivalent to borrowing money of this amount, and so it represents a cause of cash increase.

Several simplifying assumptions have been made in this example. It is assumed that no fixed assets have been sold, and that there are no dividends or taxation paid. The above logic can be applied as necessary to deal with any additional items.

The next stage is to arrange the inflow and outflow figures in a more helpful way. This should be consistent with the layout headings of IAS 7, i.e.

- cash flows from operating activities;
- cash flows from investing activities;
- cash flows from financing activities;
- net change in cash or cash equivalents (simplified, here to 'cash').

This leads to a statement as in Figure 13.1.

Figure 13.1 Cash flow statement derived from Table 13.5

Cash flows from operating activities:		
net profit		6
add back depreciation		8
		14
changes in current items:		
increase in inventory		(4)
increase in debtors		(22)
increase in creditors		26
net cash flow from operations		14
Cash flows from investing activities:		
purchase of fixed assets		(46)
Cash flows from financing activities:		
issue of share capital	6	
issue of debentures	20	
net cash flow from financing		26
Net change in cash (14 – 46 + 26)		(6)
Cash at beginning of year		10
Cash at end of year		4
Cash reduction		(6)

So the reduction in cash of 6 is made more understandable. A major cash outflow for fixed assets of 46 has been partly financed by new long-term money of 26, and partly by the effects of daily operations of 14, meaning that cash was reduced on balance by 6.

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Activity 13.D Assuming that the debentures were taken out on 1 January of a particular year and that interest was paid on 31 December, redraft the 'net cash flow from operations' entry of the cash flow statement in Figure 13.1 using the direct method, given that the balance sheets are as shown in Table 13.5 and the income statements are as in Figure 13.2.

Figure 13.2 Income statements (example)

	Year to 31 Dec X1		*Year to 31 Dec X2*	
Sales		150		250
Opening inventory	8		12	
Purchases	104		180	
	112		192	
Closing inventory	12		16	
Cost of sales		100		176
Gross profit		50		74
Wages and salaries	28		42	
Depreciation	4		8	
Debenture interest	—		2	
Other expenses	14		16	
		46		68
Retained profit for the year		4		6

Feedback Net cash flow is as set out in Table 13.6.

Table 13.6 Net cash flow (example)

Cash receipts from sales in X2 (250 + 18 – 40)	228
Cash paid to suppliers and employers [(180 + 18 – 44) + 42 + 16]	(212)
Cash generated from operations	16
Cash interest paid	(2)
Net cash flow	14

The figure for cash receipts and cash paid to suppliers are the income statement entries adjusted for the change in debtors and the change in creditors respectively.

Now try Activity 13.E for yourself.

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Activity 13.E

The balance sheet of AN Co. for the year-ended 31 March 20X2 is as shown in Figure 13.3. Prepare the cash flow statement for the year ended 31 March 20X2 using the indirect method, given that no fixed assets were sold during the year, and given that the increase in debentures took place on 1 April 20X1.

Figure 13.3 Balance sheets for AN Co

	20X1 (€000s)	*20X2 (€000s)*
Fixed assets	160	230
less depreciation	44	60
	116	170
Current assets		
Inventory	20	25
Debtors	18	15
Cash	21	27
	59	67
Creditors payable within one year		
Creditors	21	27
Taxation	12	16
Dividend	18	20
	51	63
Net current assets	8	4
Creditors payable after one year		
Debentures (10 per cent interest)	30	32
Net assets	94	142
Represented by		
Ordinary share capital of €1 shares	27	33
Share premium account	24	30
Retained profits	43	79
	94	142

Feedback The cash flow statement derived from Figure 13.3 would look like that shown in Figure 13.4.

Activity 13.F

Comment on the implications for AN Co. of the statement prepared in Activity 13.E.

Feedback The broad picture is that cash inflows arise from operations (80) and from new long-term funding (12 + 2). Cash outflows arise from investment in fixed assets (70) and the payment of dividends (18). Most of the new long-term investment has therefore been financed out of the proceeds of day-to-day operations.

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Figure 13.4 Cash flow statement derived from Figure 13.3

		€000
Operating profit:		
Increase in retained profits		36.0
Add interest on loans		3.2
Taxation		16.0
Dividend		20.0
		75.2
Net cash inflow from operations is:		
Operating profit		75.2
Depreciation		16.0
Increase in inventory		(5.0)
Decrease in debtors		3.0
Increase in creditors		6.0
Interest paid		(3.2)
Taxes paid		(12.0)
		80.0
We therefore have:		
Cash inflow from operating activities		80.0
Cash flows from investing activities:		
Purchase of fixed assets		(70.0)
Cash flows from financing activities:		
Issue of new shares (6 + 6)	12	
Dividends paid	(18)	
Issue of new debentures	2	
		(4.0)
Net cash flows		6.0
Opening cash balance		21.0
Closing cash balance		27.0
Increase in cash		6.0

A common complication is that some fixed assets are likely to have been sold in the year, as in the next activity.

Activity 13.G All the information in Activity 13.E as given in Figure 13.4 still stands except that, additionally, fixed assets originally costing €40,000, with accumulated depreciation of €15,000, have been sold during the year ended 31 March 20X2 for €26,000. Prepare a cash flow statement in the proper format that takes account of this additional information.

Feedback First of all we need to consider the effects of the new information. The amount spent on new fixed assets can be found:

Opening balance at cost + new cost − old cost = closing balance at cost.

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Hence, in our example:

160,000 + new cost − 40,000 = 230,000,

and outflow on new fixed assets is therefore 110,000 to ensure a balance in the equation. Similarly for the depreciation figures in the balance sheet:

44,000 + annual charge − 15,000 = 60,000,

and so the annual charge is 31,000.

The resulting cash flow statement would look like that shown in Figure 13.5.

Figure 13.5 Cash flow statement for Activity 13.G

		€000
Operating profit:		
Increase in retained profits		36.0
Add interest on loans		3.2
Taxation		16.0
Dividend		20.0
		75.2
Net cash inflow:		
Operating profit		75.2
Depreciation		31.0
Profit on disposal		(1.0)
Increase in inventory		(5.0)
Decrease in debtors		3.0
Increase in creditors		6.0
Interest paid		(3.2)
Taxes paid		(12.0)
		94.0
Result		
Cash inflow from operating activities		94
Cash flows from investing activities:		
Purchase of fixed assets	(110)	
Disposal of fixed assets	26	
		(84)
Cash flows from financing activities:		
Issue of new shares (6 + 6)	12	
Dividends paid	(18)	
Issue of new debentures	2	
		(4)
Net cash flows		6
Opening cash balance		21
Closing cash balance		27
Increase in cash		6

It is important to interpret cash flow statements in the context of the particular enterprise, and taking a reasonably long-term view. Borrowing, which will tend to lead to negative figures in the cash flow statement, may be a good thing as

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long as an excessively high leverage ratio is avoided and as long as long-term profitability is enhanced. Some enterprises may be structured so as to provide much of their cash needs through a positive cash flow from operations. Different industries may have different typical cash flow structures. For example large retailers – especially if they buy on credit and sell for cash – may have large positive operating cash flows. Capital-intensive industries may have a greater tendency to raise external finance.

13.5 A real example

In practice, and in the context of consolidated financial statements, published cash flow statements can be rather more complicated. We present in Figure 13.6 the consolidated statement of cash flows, together with the accompanying notes, for Nokia for the financial year ended 31 December 2002, prepared in accordance with IAS 7.

Study Figure 13.6 carefully. You should be able to explain the rationale behind the movements in Figure 13.6 in the same way as we have done it for you in relation to Table 13.5.

Figure 13.6 Consolidated cash flow statement for Nokia for the year 2002

Consolidated cash flow statements, IAS

Financial year ended Dec. 31	*Notes*	*2002 €m*	*2001 €m*	*2000 €m*
Cash flow from operating activities				
Net profit		**3,381**	2,200	3,938
Adjustments, total	33	**3,151**	4,132	2,805
Net profit before change in net working capital		**6,532**	6,332	6,743
Change in net working capital	33	**955**	978	−1,377
Cash generated from operations		**7,487**	7,310	5,366
Interest received		**229**	226	255
Interest paid		**−94**	−155	−115
Other financial income and expenses		**139**	99	−454
Income taxes paid		**−1,947**	−933	−1,543
Net cash from operating activities		**5,814**	6,547	3,509
Cash flow from investing activities				
Acquisition of Group companies, net of acquired cash (2002: €6 million, 2001: €12 million, 2000: €2 million)		**−10**	−131	−400
Purchase of non-current available-for-sale investments		**−99**	−323	−111
Additions to capitalized development costs		**−418**	−431	−393
Long-term loans made to customers		**−563**	−1,129	−776
Proceeds from repayment and transfers of long-term loans receivable		**314**	–	–
Proceeds from (+)/payment of (−) other long-term receivables		**−32**	84	–
Proceeds from (+)/payment of (−) short-term loans receivable		**−85**	−114	378
Capital expenditures		**−432**	−1,041	−1,580
Proceeds from disposal of shares in Group companies, net of disposed cash		**93**	–	4

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Figure 13.6 *Continued*

Financial year ended Dec. 31	*Notes*	*2002 €m*	*2001 €m*	*2000 €m*
Proceeds from sale of non-current available-for-sale investments		**162**	204	75
Proceeds from sale of fixed assets		**177**	175	221
Dividends received		**25**	27	51
Net cash used in investing activities		–868	–2,679	–2,531
Cash flow from financing activities				
Proceeds from stock option exercises		**163**	77	72
Purchase of treasury shares		**–17**	–21	–160
Capital investment by minority shareholders		**26**	4	7
Proceeds from long-term borrowings		**100**	102	–
Repayment of long-term borrowings		**–98**	–59	–82
Proceeds from (+)/repayment of (–) short-term borrowings		**–406**	–602	133
Dividends paid		**–1,348**	–1,396	–1,004
Net cash used in financing activities		**–1,580**	–1,895	–1,034
Foreign exchange adjustment		–163	–43	80
Net increase in cash and cash equivalents		**3,203**	1,930	24
Cash and cash equivalents at beginning of period		–6,125	4,183	4,159
Cash and cash equivalents at end of period		**9,328**	6,113	4,183

Notes to cash flow statement

	2002 €m	*2001 €m*	*2000 €m*
Adjustments for:			
Depreciation and amortization (Note 9)	**1,311**	1,430	1,009
(Profit)/loss on sale of property, plant and equipment and available-for-sale investments	**–92**	148	–42
Income taxes (Note 11)	**1,484**	1,192	1,784
Share of results of associated companies (Note 32)	**19**	12	16
Minority interest	**52**	83	140
Financial income and expenses (Note 10)	**–156**	–125	–102
Impairment charges	**524**	1,312	–
Other	**9**	80	–
Adjustments, total	**3,151**	4,132	2,805
Change in net working capital			
Decrease (increase) in short-term receivables	**25**	–286	–2,304
Decrease (increase) in inventories	**243**	434	–422
Increase in interest-free short-term liabilities	**687**	830	1,349
Change in net working capital	**955**	978	–1,377
Non-cash investing activities			
Acquisition of:			
Amber Networks	–	408	–
Network Alchemy	–	–	336
DiscoveryCom	–	–	223
Total	–	408	559

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SUMMARY

- Cash flow statements provide a different focus from the income statement and balance sheet, and they give important insights into cash and liquidity changes and trends.
- Cash flow statements are not always required by law; but they are virtually universal, for listed companies, and are required by national regulation in many countries. IAS 7 has had a major influence in this area.
- IAS 7 requires four major sections in a cash flow statement:
  - cash flows from operating activities;
  - cash flows from investing activities;
  - cash flows from financing activities;
  - net change in cash or cash equivalents.
- Cash flows from operating activities may be prepared using either the direct or the indirect method. In practice the indirect method generally predominates.
- Practice in the usage and interpretation of cash flow statements is required.

References and research

The key reference is:

- IAS 7, *Cash Flow Statements*.

Some specific suggestions for reading are as follows:

- D. Boussard and B. Colasse, 'Funds-flow statements and cash-flow accounting in France: evolution and significance', *European Accounting Review*, Vol. 1, No. 2, 1992.
- C. Yap, 'Users' perceptions of the need for cash flow statements – Australian evidence', *European Accounting Review*, Vol. 6, No. 4, 1997.

Self-assessment questions

Suggested answers for these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

13.1 The cash flow statement provides a useful complement to the other annual financial statements because:

(a) It provides new information, mostly not available elsewhere in the other statements or their notes.
(b) It shows how much cash will be needed to run the business during the forthcoming year.
(c) It summarizes the contents of the other statements in a clearer form.
(d) It presents the information contained in the other statements in a different way.

13.2 Which one of the following results in a cash flow?

(a) An issue of bonus shares.
(b) A rights issue of shares.
(c) A depreciation charge.
(d) Revaluing a fixed asset.

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13.3 In a cash flow statement, which one of the items below would appear as a cash inflow?

(a) Revaluation of fixed assets.
(b) Profit on disposal of fixed assets.
(c) Purchase of fixed assets.
(d) Proceeds on disposal of fixed assets.

13.4 Cash flow statements for limited companies are required by both International Accounting Standards and EU Directives.

(a) True.
(b) False.

13.5 Under IAS 7, any principal revenue-producing activity that is not an investing or a financing activity is automatically an operating activity.

(a) True.
(b) False.

13.6 All enterprises following IAS 7 will have consistently calculated figures for 'cash equivalents'.

(a) True.
(b) False.

13.7 The direct method of calculating cash flows from operating activities uses actual cash movements. In times of rising price levels it is therefore likely to lead to higher reported cash flows from operating activities than the indirect method would give.

(a) True.
(b) False.

13.8 A change in depreciation rates will lead to a change in reported cash flows from operating activities.

(a) True.
(b) False.

Exercises

Feedback on the first two of these exercises is given in Appendix E.

13.1 'Expenses and revenues are subjective; cash flows are facts. Therefore cash flow statements cannot mislead.' Discuss.

13.2 Study Figure 13.6 in the chapter. Write a short report on Nokia's management of its cash flows over the three-year period reported.

13.3 The balance sheet of Dot Co. for the year ended 31 December 20X4, together with comparative figures for the previous year, is shown in Figure 13.7 (all figures €000).

You are informed that there were no sales of fixed assets during 20X4, and that new shares and debentures issued in 20X4 were issued on 1 January.

Calculate operating profit and net cash flow from operations, and prepare a cash flow statement for the year 20X4, consistent with IAS 1, as far as the available information permits. Comment on the implications of the statement.

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Figure 13.7 Balance sheet for Dot Co.

		20X3		20X4
Fixed assets		180		270
Less depreciation		(56)		(90)
		124		180
Current assets				
Inventory	42		50	
Debtors	33		40	
Cash	11		–	
		86		90
Creditors payable within one year				
Trade and operating creditors	(24)		(33)	
Taxation	(17)		(19)	
Dividend	(26)		(28)	
Bank overdraft	–		(10)	
		(67)		(90)
Net current assets		19		–
Net assets		143		180
Represented by				
Ordinary share capital €1 shares		20		25
Share premium account		8		10
Retained profits		55		65
Shareholders' fund		83		100
Debentures (15 per cent interest)		60		80
Capital employed		143		180

13.4 Repeat Exercise 13.3, but this time work on the assumption that fixed assets that had originally cost €30,000, with accumulated depreciation of €12,000, had been sold during the year ended 31 December 20X4 for €11,000.

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14

Group accounting

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OBJECTIVES

After careful study of this chapter, you should be able to:

- outline the idea of the group for financial reporting purposes;
- distinguish between the concepts of control, joint control and significant influence;
- explain why it may be useful to produce separate sets of financial statements for an investor and for its group;
- prepare simple consolidated balance sheets, taking account of minority interests and inter-company transactions;
- explain the different possible treatments of goodwill arising on consolidation;
- outline the proportional consolidation and equity methods.

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14.1 Introduction: the group

As explained briefly in chapter 4, the economic world is dominated by enterprises that are structured as groups, each comprising a large number of legally separate entities. The reasons for such complex structures include the following:

- the various entities in the group need to be legally separate because they operate in several countries under several different laws;
- there are tax advantages in being separate or tax disadvantages in combining formerly separate entities;
- the legal structures may partially reflect a hierarchical organizational structure or the way in which the group was put together over time.

So far in this book, the discussion has largely been set in the context of an individual legal entity. However, for the purpose of looking at the financial statements of nearly all the world's most important economic entities, which are groups, we must now change this approach. Since the components of a group act together as though they were a single economic entity, it makes sense for accountants to prepare financial statements for a group on this basis, which does not just mean adding all the figures of the group companies together, as will be explained. In many countries, financial statements are available both for the group and for the individual legal parts of it.

Why it matters *Suppose that a company has several subsidiaries but that its shareholders or lenders look only at the unconsolidated financial statements of the company as a legal entity. As explained later, in many countries (e.g. France, Germany and the UK), the balance sheet would show the subsidiaries as investments (generally at cost), and the income statement would only show dividend income. If the parent sold some inventory to a subsidiary at an artificially high price, profits would be shown in the parent's income statement. If the subsidiaries borrowed large amounts of money for the group, this would not show up in the parent's balance sheet. In other words, the parent's statements may give a misleading picture of the performance of the economic entity.*

Some possible relationships between an investor company and the entities in which it owns shares are shown in Figure 14.1. The circle in Figure 14.1 is the perimeter of the group for accounting purposes. The key question is: where should we draw the perimeter; what is in the group? This chapter considers that question, and then how to account for the group and things connected to it.

Since the group's financial statements are designed to present the group companies as if they were a single entity, the assets and liabilities in the group's balance sheet must meet the definition of asset and liability (see chapter 8) from the group's point of view. For example, for an item to appear as an asset it must be controlled by the group. This implies that for an entity to be included in the group its financial and operating policies must be controlled by the investor company. IAS 27 (paragraph 6) defines a *subsidiary* simply as:

> an enterprise that is controlled by another enterprise (known as the parent) … . Control is the power to govern the financial and operating policies of an enterprise …

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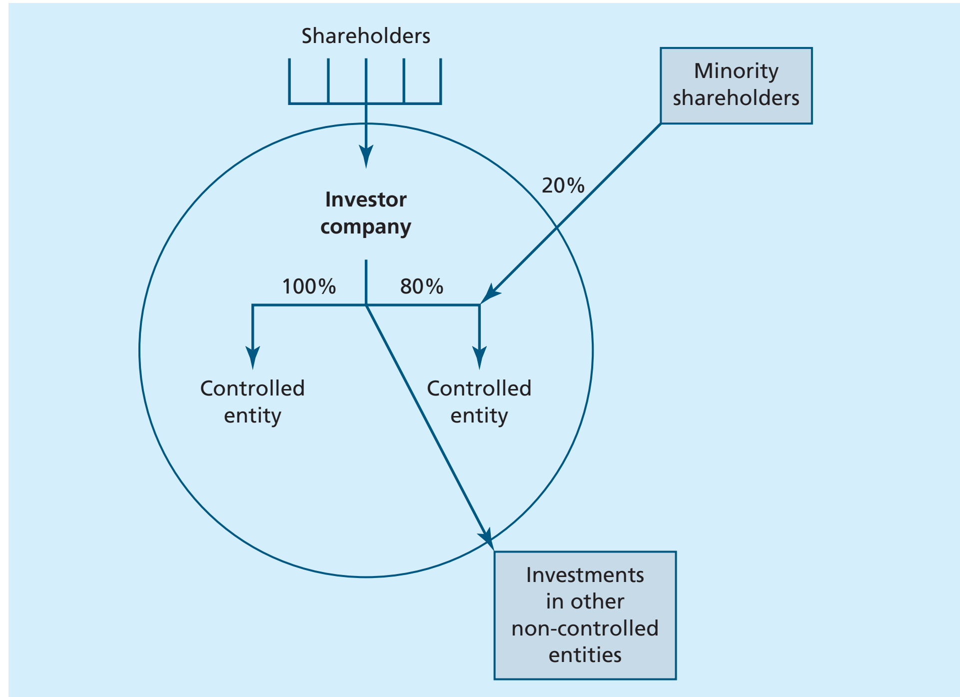
Figure 14.1 A group (1)



There is clearly a close connection between control and the ownership of voting shares. It is almost always the case that if company X owns more than half the voting shares of company Y, then X controls Y and so is the parent of Y. In some jurisdictions, the definition of a subsidiary rests on this ownership of shares (this is approximately the case in Spain) or the definition of control does (as in the United States).

Why it matters *Groups might wish to hide their liabilities in order to present a better picture. If it is possible to set up controlled entities that are not consolidated, then the group can arrange for these entities to borrow money or sign a finance lease contract without it showing up as liabilities on the group balance sheet. This was one of the major features of the bad accounting by the US company, Enron, before it collapsed in 2001.*

However, IAS 27 and most European laws make it clear that all controlled entities are subsidiaries, and that control can exist with less than a majority of the voting shares, if somehow in practice there is power to appoint the majority of board directors or to control the majority of votes on the board. For example, if company X owns 48 per cent of voting shares of company Y and all the other shares are owned by thousands of small shareholders who do not use their votes, then company X will be able to control the board appointments of company Y.

In line with this, in France and Japan there is a presumption that ownership of 40 per cent or more of the voting shares means that there is control. Of course, it would be easy to overcome the presumption if it can be shown that 55 per cent is owned by one other shareholder.

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Activity 14.A

There are three cases of relationships below. Wherever S_1 or S_2 appear, they are subsidiaries of H.

1. H owns 75 per cent of the voting shares of S_1, which in turn owns 40 per cent of the voting shares of X. H also owns directly 15 per cent of the voting shares of X. The relationships are easier to see if a diagram is drawn, and this is given in Figure 14.2.

Figure 14.2 Example interrelationship of ownership with three companies

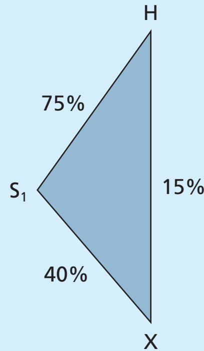


Figure 14.3 Example interrelationship of ownership with four companies

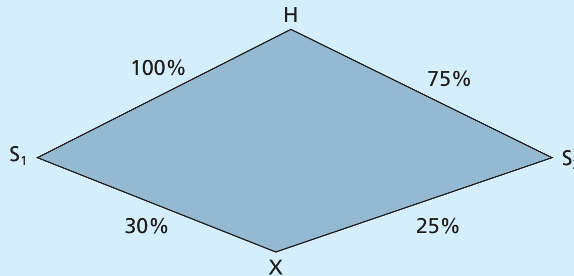
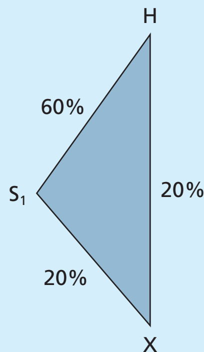


Figure 14.4 Example interrelationship of ownership with three companies



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2. H owns 100 per cent of the voting shares of S_1, which in turn owns 30 per cent of X. H also owns 75 per cent of S_2, which in turn owns 25 per cent of X. This relationship is shown in Figure 14.3.
3. H owns 60 per cent of the voting shares of S_1, which in turn owns 20 per cent of the voting shares of X. H also owns directly 20 per cent of the voting shares of X. This relationship is shown in Figure 14.4.

   In which of these three cases is X also part of the group?

Feedback

1. S_1 is a subsidiary of H (75 per cent ownership); X is not a subsidiary of S_1 (assuming no dominant influence in practice). H directly owns:

$$[75\% \times (40\% \text{ of } X)] + (15\% \text{ of } X)$$
$$= 30\% + 15\%$$
$$= 45\%.$$

   This might seem to imply no subsidiary relationship. However, H *controls* S and thus controls (40% of X) plus 15 per cent. Therefore, X *is* a subsidiary of H.

2. S_1 and S_2 are subsidiaries of H. H directly owns:

$$(100\% \times 30\%) + (75\% \times 25\% \text{ of } X)$$
$$= 30\% + 18.75\%$$
$$= 48.75\%.$$

   However, H *controls* (30% + 25%) = 55% of X. Thus X is a subsidiary of H.

3. S_1 is a subsidiary of H.

   H owns: $(60\% \times 20\%) + (20\% \text{ of } X) = 32\% \text{ of } X$
   H controls: $20\% + (20\% \text{ of } X) = 40\%$

   Thus X is *not* a subsidiary of H (assuming no control in practice).

14.2 Investments related to the group

In addition to the entities controlled by the group, there may be other investments outside the group, as shown in Figure 14.1. In more detail, these might be as shown in Figure 14.5.

The jointly controlled entity in Figure 14.5 may have one other shareholder owning the other half of the shares. There is more difficulty with applying the concept of control here. Such an entity is called a 'joint venture'. It occurs where two or more venturers have an agreement to control the venture jointly. Under French rules, and as a preference in IAS 31, *Joint Ventures*, joint venture entities are seen as partly within the group, not as in Figure 14.5. In the US and UK rules, they are seen as outside the group. In most countries, both views are allowed.

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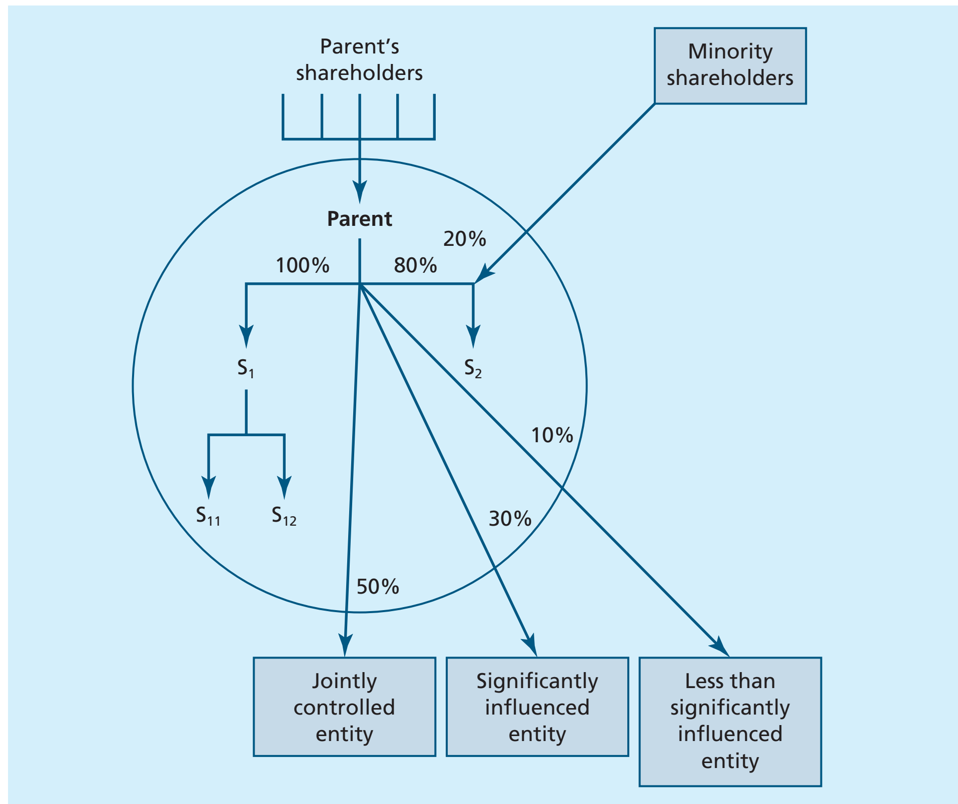
Figure 14.5 A group (2)



Activity 14.B If a company owns 25 per cent of the shares in a joint venture (JV), does it control the assets of the JV? If not, does it control a quarter of the assets? Is the case different if the parent owns exactly one half?

Feedback As noted earlier, control is defined by the IASB as power to control the operating and financial policies of an investee. At its most basic, the question becomes: could the investor go into the JV and do what it likes with the assets (or a proportion of the assets)? The answer is 'no' in both the 25 per cent and the 50 per cent case. Consequently, none of the assets of the JV is in the group. This seems to mean that French and preferred IFRS practice is inconsistent with the concept of 'control', on which group accounting is generally based. This will be discussed again later.

It is important to remember which entity we are accounting for. Whether it is the investor or the investor's group, there is no control. Taking the venturers together, there would be control, but we are not accounting for two or more venturers together.

The other investments identified in Figure 14.5 are clearly not part of the group because they are not controlled. However, one of these is included in a special cat-

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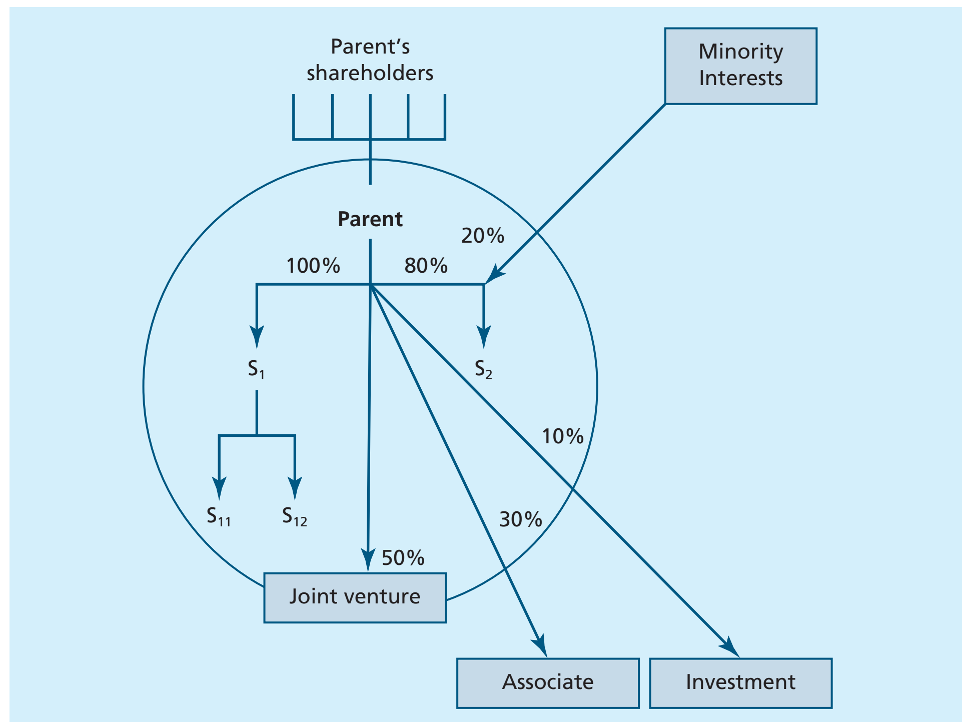
egory of entities over which an investor exercises 'significant influence' without control. This influence is generally presumed to exist when an investor has at least a 20 per cent holding in the voting shares of the other company. Evidence of significant influence would include the ability to appoint at least one director to the board of the associate. In the domestic rules of some countries, the presumption of significant influence starts at a lower threshold; for example, at 3 per cent for holdings in listed companies in Spain, and at 10 per cent for such holdings in Italy. Such investments are called 'associates' and are accounted for in a particular way, as described later.

Putting all these terms together, the group and its connected companies can be redrawn as in Figure 14.6. The parent has a series of subsidiaries, such as S_1 and S_2, which themselves can be parents of subsidiaries, such as S_{11} and S_{12}. Not all subsidiaries are wholly owned by their parents. For example, S_2 is 80 per cent owned

The BASF Group Financial Statements include:

- BASF Aktiengesellschaft (the parent);
- 144 fully consolidated subsidiaries;
- 11 joint ventures consolidated proportionally;
- 21 immaterial subsidiaries accounted for by the equity method;
- 1 immaterial joint venture accounted for by the equity method;
- 4 associated companies accounted for by the equity method.

Figure 14.6 A group (3)



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by the parent and 20 per cent owned by other shareholders who are said to have a *minority interest* in the group. Note that this technical term does *not* refer to companies in which the group itself has a minority interest.

The German chemical company BASF describes this for 2000 as shown in the box on the previous page (the term 'equity method' being explained below).

14.3 Accounting for the group

In the example of Figure 14.6, there are eight legally separate entities (the parent, four subsidiaries, one joint venture, one associate and one other investment). These can all borrow money and own buildings. They all pay tax and dividends. In most countries, it is thought useful to present separate sets of financial statements for several – or for all – of the legal entities in the group, and then to present consolidated statements also.

14.3.1 The parent's financial statements

In the parent's financial statements, the practice is to account for the direct legal arrangements. In the above case, the parent company owns and controls its investments in the other seven entities. Consequently, in the parent's balance sheet the investments would be shown as fixed asset investments rather than showing all the individual assets and liabilities that the parent controls through its control of some of the other entities. Also, in the parent's income statement, accountants show just a single line of 'income from investments' rather than the sales, wages, interest, etc. of the investees.

In most countries, the valuation of the controlled and significantly influenced investments is at cost (less any impairment; see chapters 9 and 11), as it is for other investments and other fixed assets; and the income is measured at the level of dividends flowing from the investments. This is also allowed under IFRS, although it is also possible to show these investments at fair value as available-for-sale financial assets (see chapter 11).

However, in a few countries, such as Denmark, the Netherlands and Norway, the influence of the parent over the other entities is seen as sufficient to justify taking credit for its share of profit, not just for the dividends received. In a balance sheet, the parent then includes the excess of profit over dividends as an increase in value of the investment. This is called the *equity method*. It is important to learn about it for consolidated accounting in nearly all countries (and see section 14.6, where a fuller explanation is given).

Let us take an example. Suppose that a parent buys all of the shares of a company for €100 million. The double entry for this would be:

Debit:	Investment	€100m	
Credit:	Cash		€100m

It is assumed for the moment that no goodwill is involved here – in other words, that the cost of the shares equals the value of the subsidiary's equity (net assets) at the date of acquisition.

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Suppose that, in the first year, the new subsidiary makes a profit of €20 million and pays a dividend of one quarter of that. The effects on the parent if the equity method were to be applied would be:

Debit:	Cash	€5m	
Debit:	Investment	€15m	
Credit:	Income		€20m

So the investment would now be shown at €115 million, which reflects the fact that the subsidiary's equity has grown by €15 million as a result of its undistributed profit.

This method is applied in investor company statements in Denmark, the Netherlands and Norway, not only to investments in subsidiaries but also to others that are at least 'significantly influenced', namely joint ventures and associates.

14.3.2 Consolidated balance sheets

In addition to the eight legal entities in Figure 14.6, there is also the economic entity of the group as a whole. For reasons mentioned in section 14.1, it is now thought to be essential to show the position for the whole group as a single entity. This idea is taken to an extreme in the country at the extreme in terms of dominance of investors as users of financial statements, namely the United States. In the US, it is normal to present financial statements for the group only, and not to bother about publishing the statements of the lesser legal entities. An element of this can be found in some European countries, which exempt a subsidiary from having to publish financial statements if the parent company guarantees all the subsidiary's debts.

Activity 14.C

Let us now move on to the preparation of consolidated statements. Consider the situation shown in Table 14.1, in which Big Co. acquired the whole of the issued ordinary share capital of Little Co. at a price of €2.5 per share (i.e. €125,000 cash) as at 30 June, at which date their respective balance sheets were as shown.

Table 14.1 Balance sheets for Big Co. and Little Co.

	Big Co. (€)	*Little Co. (€)*
Land and buildings	50,000	25,000
Plant	40,000	20,000
Investment in Little Co.	125,000	–
Sundry other assets	20,000	15,000
	235,000	60,000
€1 ordinary shares	150,000	50,000
Reserves	85,000	10,000
	235,000	60,000

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As at this date, the estimated market values of Little Co. assets were different from those recorded in the balance sheet:

Land and buildings	€30,000
Plant	€22,000
Sundry other assets	€15,000
Total	€67,000

Think first about the statements of Big (the parent company) in isolation. If these statements were sent to the shareholders of Big, how useful would this information be?

Feedback In Big's balance sheet the shareholding in Little will simply appear as an investment at historical cost (unless it used the equity method). However, as with any other asset in a balance sheet, the use of historical cost would not normally give the shareholders of Big a good indication of the value of the subsidiary or of the underlying assets. In Big's income statement, the only reference to the subsidiary would be 'dividends received from Little' (assuming there were any) and, of course, this would give no indication of the subsidiary's profitability. The holding company's financial statements give no meaningful information about the whole group's activities.

Group statements are prepared by adding together (*consolidating*) the position and results for all the components of the group. The basic process of consolidation takes the balance sheet of Big Co. as the starting point. In order to show the group as a single entity, the 'Investment in Little' entry must be removed and replaced by the assets and liabilities of Little that it represents, and the remaining difference shown as 'Goodwill on consolidation'. So, the goodwill is what Big paid, less what is bought. This procedure means that the resulting group balance sheet shows no 'Investment in Little', because a group cannot own an investment in itself.

The above procedure leaves a crucial question unresolved, because two alternative values are available for the net assets (i.e. assets – liabilities) of Little Co.: (i) the figures taken from the company's own accounting records as shown in its balance sheet (largely based on historical cost), or (ii) the current market values or 'fair values'. It is clearly arithmetically possible to use either set of figures, as the goodwill arising on consolidation is simply a balancing number. It is now the practice in most countries, and required under IAS 22, *Business Combinations*, to use the fair values rather than the book values. This whole procedure of accounting for the business combination of Big Co. and Little Co. is called acquisition accounting or the purchase method.

Activity 14.D Redraw the balance sheet of Little Co. from Table 14.1 in order to show how it would be shown for the purposes of preparing the consolidated balance sheet.

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Feedback The current values shown in Activity 14.C would be used to replace those in Table 14.1. The result would be Table 14.2. The reserves now include a revaluation reserve of €7,000. In most countries, this re-drawn balance sheet would not be the one published. It would only be used within the group as part of the process of preparing the consolidated statements.

Table 14.2 Redrawn balance sheet of Little Co. (€)

Land and buildings	30,000
Plant	22,000
Sundry other assets	15,000
	67,000
€1 ordinary shares	50,000
Reserves	17,000
	67,000

This use of revalued amounts in the consolidated statements does not mean that the consolidated balance sheet departs from the cost model: the fair value of the subsidiary's incoming assets is an estimate of what it would have cost to buy them individually at the date when the subsidiary was bought. The resulting consolidated balance sheet, starting from Table 14.1 but using the fair values as revised in Table 14.2, is shown in Table 14.3.

Table 14.3 Big and Little consolidated balance sheet (€000s)

Land and buildings	80	(50 + 30)
Plant	62	(40 + 22)
Sundry other assets	35	(20 + 15)
Goodwill on consolidation	58	(125 – 67)
	235	
Ordinary share capital	150	(150 + 50 – 50)
Reserves	85	(85 + 17 – 17)
	235	

As with any consolidation, only the holding company's share capital is shown as the capital of the group. The subsidiary's own share capital reflects internal financing within the group, and is simply a reflection of the investment in the subsidiary as shown in the assets of the holding company's individual balance sheet. In essence, these two items are 'netted off' as part of the 'goodwill on consolidation' calculation. The €50,000 + €17,000 of equity at the bottom of Table 14.2 is set off in the goodwill calculation.

The figure called 'goodwill on consolidation' can be thought of in a number of ways. The easiest way is to think of it simply as a number – as a difference created by the bookkeeping. This idea can be seen in the Italian expression for the number: *differenza da consolidimento*. Another way of looking at it is that the

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goodwill amount is a premium on top of the separate values of the net assets. This idea comes through in the French term: *écart d'acquisition*. In the above example, the goodwill is, as usual, what Big paid, less the net assets that it bought. Big bought 100 per cent of the ownership interest in Little, paying €125,000 for a collection of resources that appear to be worth only €67,000 even at current values. So, the goodwill is €58,000.

The next question to ask is whether the goodwill is an asset to be recognized in the group's balance sheet. Consider the IASB's definition of an asset (seen in earlier chapters):

> An asset is a resource controlled by the enterprise as a result of past events and from which future economic events are expected to flow to the enterprise.

Such an item should be incorporated in the balance sheet if:

(a) it is probable that any future economic benefit associated with the item will flow to or from the enterprise; and
(b) the item has a cost or value that can be measured with reliability.

Why did Big pay €125,000? There are two possible reasons: first, the directors of Big are stupid or interested in expansion at any cost; second, the directors of Big believe the purchase to be worth at least €125,000. Ignoring the first possibility, it follows that:

(i) the goodwill on consolidation results from a past transaction;
(ii) Big believes that this goodwill on consolidation will probably lead to benefits in the future; and
(iii) the cost of the goodwill can be measured by subtracting the fair value of the identifiable net assets from the investment in shares.

The remaining issue in determining whether or not the goodwill is a recognizable asset is whether Big *controls* the resources. If the resources are seen as the loyal customers, trained staff, monopoly position, etc., it seems that these are *not* controlled because the customers and the staff could leave and the monopoly position could be worn away or legislated against. If the goodwill is the 'going concern' element, Big does seem to control that.

Anyway, most accounting systems, including IFRS, treat the goodwill as an asset that should be capitalized. In the domestic rules of some countries, such as Germany and the Netherlands, it is legally possible to write off goodwill against reserves immediately on acquisition, thereby never showing it as an asset.

14.3.3 Subsequent treatment of goodwill

As with other items shown as assets, goodwill presumably wears out. However, because it is not quite clear what the goodwill is, there are problems in assessing its useful economic life. Nevertheless, there seems to be a good argument that the elements of goodwill bought at the date of acquisition do wear out: eventually the customers die, the staff retire and fashions change. In a fast-moving industry, goodwill may have a short life.

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The EU Fourth Directive (Articles 34.1 and 37.2) suggested a life of five years but allowed longer. There are no limits in Germany. The laws in Norway, Portugal and Sweden allow a maximum of 20 years; and, in Spain, the maximum is 10 years. Until 2003, UK and IAS standards imposed a rebuttable presumption of a limit of 20 years but longer periods could be used if a company could make a special case; but then an annual test of impairment had to be carried out (see section 9.6). In order to eliminate charges based on an arbitrary length of life, the US standard setter (the FASB) changed its rule in 2001 to require annual impairment calculations instead of amortization. This approach was followed by the IASB (starting with an exposure draft to amend IAS 22 in 2002). However, this can be criticized because it does not separate the initially purchased goodwill from that subsequently arising; so, as long as the cost of the initial goodwill is exceeded by the value of all the goodwill, no impairment is recognized. There is also a major practical problem here in annually measuring the 'value' of an asset as intangible as goodwill. This is done by assessing the value of the major components of the group to which the goodwill has been allocated.

One issue that is not relevant here is taxation. This is because goodwill on consolidation, and therefore amortization expenses related to it, occurs only in consolidated statements. Such statements are not relevant for taxation because tax works primarily on the basis of individual legal entities, such as a parent company. Consequently, the amortization or impairment of goodwill on consolidation is not relevant for tax, which is why there is usually no pressure from companies to amortize it very rapidly.

Why it matters *Using the example of Big Co. and Little Co., as in Table 14.3, four different treatments of goodwill can be illustrated:*

1. *Amortize over 5 years.*
2. *Amortize over 20 years.*
3. *Write off to reserves.*
4. *Impairment only.*

Table 14.4 shows the position for the first three of these after two years, ignoring the effects of all other changes such as depreciating other assets, making profit, paying dividends. In Case 1, the initial goodwill of 58 has been amortized for two

Table 14.4 Big Co. and Little Co.: three different balance sheets after two years (€000)

	Case 1	*Case 2*	*Case 3*
Goodwill on consolidation	34.8	52.2	0
Land and buildings	80	80	80
Plant	62	62	62
Sundry other assets	35	35	35
	211.8	229.2	177
Ordinary share capital	150	150	150
Reserves	61.8	79.2	27
	211.8	229.2	177

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years at 20 per cent per year; in Case 2, the same has occurred at 5 per cent per year. Of course, the readers of the financial statements will also be interested in the group's profit figures. These will look best for Case 3 (because there is no amortization expense since goodwill is written off against reserves, and there is no asset to amortize) and worst for Case 1.

Case 4 (impairment only) might look even better because goodwill would remain at 58 (and reserves at 85) unless the group suffered adverse conditions leading to an impairment.

14.3.4 Consolidated income statements

As for the consolidated balance sheet, so for the consolidated income statement the idea is to present a picture of the group as though it were a single entity. For many items in the group's income statement, this is straightforward. For example, the consolidated wages expense is the total of the wages expenses of all the group enterprises. Similarly, the consolidated sales figure is the total of all the group's sales figures to outsiders. There is a complication in that some sales may be made to other members of the group. These need to be eliminated, as examined below in subsection 14.3.6.

One expense that appears in the consolidated income statement but will not have appeared in the income statements of any component of the group is any amortization or impairment of goodwill arising on consolidation.

14.3.5 Minority interests

It is now time to add an extra complication into the discussion of group accounting. Suppose that the holding company (or parent company) buys less than the whole of the shares in the subsidiary. This leaves a *minority* set of shareholders in the subsidiary who are not shareholders in the parent. In some countries, consolidation is performed by taking the view of the parent company shareholders (the *parent company approach*). Although the consolidation process begins by adding together all the resources and results of the controlled entities, the proportion of the resources and results that is not actually owned by the parent (the minority interests) are then shown:

(a) in the income statement, as a reduction in net profits (or the reverse, if the subsidiary made a loss), to arrive at earnings attributable to the shareholders of the parent company;
(b) in the balance sheet, separately from shareholders' funds and liabilities.

The minority interests shown as (b) above represent a claim on the group resources by those *outside* the main ownership interest, which is the interest of the owners of the parent.

However, according to the IASB's Framework, the minority interest must be equity because it does not fit the definition of a liability, because there is no obligation to pay share capital and reserves to the minority shareholders. Therefore, IAS 27 was amended in 2003 to require minority interests to be shown as part of group equity though not part of parent's equity.

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In order to highlight one issue at a time, the example in Tables 14.1 to 14.3 had no minority interest, for the subsidiary was wholly owned. However, consider the companies H and S, as shown at 31 December 20X2 in Table 14.5. Suppose that H had purchased 80 per cent of the 8,000 shares of S for cash at 31 December 20X1 at a price of €1.50 per share, when the balance on S's reserves had stood at €2,000. At that date, then, the net assets and shareholders' funds (the equity) of S were €10,000 (i.e. €8,000 + €2,000). The purchase price was €9,600 (i.e. 80 per cent × €1.50 × 8,000 shares).

Table 14.5 Balance sheets of H and S at 31 December 20X2

	H	*S*
Plant and machinery	60,000	5,000
Investment in S	9,600	–
Sundry current assets	35,000	6,000
	104,600	11,000
€1 ordinary shares	40,000	8,000
Reserves	64,600	3,000
	104,600	11,000

Figure 14.7 Consolidated balance sheet of H and S at 31 December 20X2 (€)

Goodwill on acquisition (Note 1)	1,600
Plant and machinery	65,000
Sundry current assets	41,000
	107,600
€1 ordinary shares	40,000
Reserves (Note 2)	65,400
Minority interests (Note 3)	2,200
	107,600

Notes

1. Cost of investment in S		9,600
less 80% of net assets of S (= shareholders' funds) at 31 December 20X1 80% × (8,000 + 2,000)		8,000
		1,600
2. Reserves of H at 31 December 20X2	64,600	
Reserves of S accruing to group since date of acquisition (3,000 – 2,000) × 80%	800	
		65,400
3. Share capital at 31 December 20X2 of S relating to minorities (20% × 8,000)		1,600
Reserves at 31 December 20X2 of S relating to minorities (20% × 3,000)		600
		2,200

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Since all of the assets of S (all of which are *controlled* by H) are being brought in, it is necessary to account for the minority's 20 per cent claim. The consolidated balance sheet as at 31 December 20X2 would be as shown in Figure 14.7. The minority interest of €2,200 is calculated as in Note 3 but can also be seen to be equal to 20 per cent of the minority's initial stake, i.e. 20 per cent of (€8,000 + €2,000) = €2,000, plus 20 per cent of S's income since its purchase, i.e. 20 per cent of (€3,000 – €2,000) = €200.

In the consolidated income statement, the minority's share of profit is generally deducted at the end in order to show the net profit attributable to the parent company shareholders. In the above example, €200 would be deducted in the consolidated income statement for 20X2.

14.3.6 Intercompany transactions

It is likely that companies within a group will trade with each other and lend to each other. Remembering that H and S (holding and subsidiary companies) are separate legal entities, if H sells goods to S at above their cost, then H has made a profit. If S has not yet sold the goods to outsiders, then the total group has made no profit or loss, because the group, considered as an economic entity, has not done anything. In preparing consolidated accounts, therefore, the positions and results of H and S cannot simply be added together. These sales and profits 'made' by H by selling to S must be removed from the consolidated results so as to leave only those profits that have been 'made' by the group as a whole by selling to outsiders. Intercompany loans between companies within the group structure must be similarly cancelled out, so as to present a picture of loans made by or to the group considered as a single economic entity.

If, for example, H owns 75 per cent of S, then it could be argued that 25 per cent of the profits have really been 'made' by the group, as 25 per cent of the sale from H to S related to the minority interest, which is by definition not part of the group. This logic would lead to the conclusion that only 75 per cent of the profit made between H and S would need to be removed on the consolidation. However, this practice is usually felt to be inappropriate, especially as H controls S and therefore controls the whole sale. IAS 27 (paragraph 17) requires the elimination of 100 per cent of such intercompany profits. This is also arithmetically easier for complex groups.

Activity 14.E The financial year end of two companies *A* and *B* within the same group is 31 December. On 29 December *A* despatched goods to *B* to invoice value of €40,000 and charges *B*'s ledger account accordingly. *B* does not receive either goods or invoice until 4 January. Prepare the consolidation adjustment on *B*'s books and note any other adjustment that may be required on consolidation.

Feedback The adjustment will bring the goods into *B*'s books as at 31 December:

B ledger books	Dr.	Cr.
Goods in transit	€40,000	
A current account		€40,000

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On consolidation the respective inter-company balances in the current accounts which are now in agreement will cancel out.

However, we must remember that this stock of €40,000 in transit will contain an element of unrealized profit and this will need to be eliminated on consolidation.

14.4 Uniting of interests

The examples used so far are based on the concept of a take-over (or perhaps an agreed acquisition) of a small company by a larger one. However, it is possible for two enterprises to come together by agreement and on a more or less equal basis. In accounting terms this has been referred to as a *uniting of interests* (IFRS), *merger accounting* (UK) or *pooling of interests* (US). In such cases, two or more companies merge their previously separate businesses into one integrated unit and the combined new ownership's interests mirror the relative interests of the original entities. There is generally little or no cash involved because the combination is achieved by one of the companies issuing more shares and transferring them to the other company's shareholders. It should be noted that in several countries, e.g. the United Kingdom and the United States, these 'mergers' were usually achieved legally by a take-over. In other countries, a 'legal merger' (*fusion* in French or *fusione* in Italian) may occur.

Uniting of interests accounting is allowed under the EU Seventh Directive (Articles 19 and 20). The method assumes no purchase, and therefore there is no goodwill and no fair value exercise. The method is rare in most European countries, although the DaimlerChrysler (German–US) combination was treated as a pooling under US accounting. Also, it was occasionally seen under UK accounting – for example, in the business combinations of BP (UK) with Amoco (US) and of Astra (Sweden) with Zeneca (UK).

In practice, it was possible for management to arrange for combinations to look like unitings/poolings in order to use the more flattering accounting. To stop this, the US standard setter (the FASB) abolished the method for any business combination from 1 July 2001. However, former poolings remain in place, so they continue to affect financial statements. The IASB announced proposals to abolish the method in 2002.

Why it matters *Although fairly rare, the uniting of interests method was particularly found in very large business combinations and it can still have an enormous effect on the numbers. For example, the net assets (equal to the shareholders' funds) of the pharmaceutical company Astra Zeneca are shown in Table 14.6 at the year ends before and after the*

Table 14.6 Astra Zeneca's net assets for 1998 and 1999

	UK published net assets (£m)	*US adjusted net assets (£m)*	*Change*
1998	10,929	5,558	–49%
1999	10,302	33,375	+227%

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merger that created it. As noted above, under UK accounting, it was treated as a merger. Under US accounting, it would have been treated as an acquisition, and so the assets (including goodwill) would have looked much larger.

14.5 Proportional consolidation

As mentioned earlier, entities other than subsidiaries can be connected to the group. Consider two companies, H and J. The former has acquired 50 per cent of the equity share capital of J for cash at 31 December at a price of €1.50 per share, and their respective balance sheets as at 31 December are as shown in Table 14.7. Suppose that another company owns the other half of J's shares and that J is a jointly controlled 'joint venture'.

Table 14.7 Balance sheets of H and J

	H	*J*
Plant and machinery	50,000	4,000
Investment in J		
(i.e. 8,000 shares × 50% × €1.50)	6,000	–
Sundry current assets	28,600	6,000
	84,600	10,000
€1 Ordinary shares	40,000	8,000
Reserves	44,600	2,000
	84,600	10,000

It was mentioned in section 14.2 that one way of dealing with this in the group financial statements is by proportional consolidation. Using this method we add together the various components of each company's balance sheet (assets and liabilities) on the basis of H's proportionate interest in J in order to arrive at the 'group' picture. The effect of this is to remove the 'Investment in J' from H's balance sheet and replace it with the proportion of all the individual items that it represents. The results are shown in Table 14.8. For simplicity, any subsidiaries of H are left out here.

Proportional consolidation is preferred in IAS 31 on *joint ventures*, is optional in the EU Seventh Directive for the treatment of joint ventures in group accounts, and is used in practice in several European countries. For example, in French domestic rules it is compulsory, and in the Netherlands and Germany it is common. In the United States and the United Kingdom it is prohibited, except for holdings in joint ventures that are not themselves companies.

Table 14.8 Proportional consolidation of H and J

Goodwill on consolidation	1,000	{6,000 – [50% × (8,000 + 2,000)]}
Plant and machinery	52,000	[50,000 + (50% × 4,000)]
Sundry current assets	31,600	[28,600 + (50% × 6,000)]
	84,600	
Ordinary share capital	40,000	
Reserves	44,600	
	84,600	

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Proportional consolidation is controversial because there must be doubts that the group *controls* any of the assets of the joint venture (see section 14.2). Consequently, there is another method for treating joint ventures in consolidated statements: the equity method. This was introduced briefly in section 14.3, and is taken further next.

14.6 The equity method

Earlier in this chapter it was noted that the equity method has several uses, including:

- to show the investments in subsidiaries in a parent's financial statements under the domestic rules of Denmark, the Netherlands and Norway (this also applying to investments in joint ventures and associates in those countries);
- to show investments in associates and some joint ventures in consolidated statements.

IAS 28 (paragraph 3) says:

> The *equity method* is a method of accounting whereby the investment is initially recorded at cost and adjusted thereafter for the post acquisition change in the investor's share of net assets of the investee. The income statement reflects the investor's share of the results of operations of the investee.

An illustration will be useful here. Suppose that company X had acquired 600 ordinary shares in company Y (which amounted to 30 per cent of the company) at a price of €1.50 per share on 31 December 20X1. Thus, the investment in the associate was €900 (600 shares at €1.50 each). At the original purchase date, the reserves of Y had been €800. The respective balance sheets of X and Y a year later (at 31 December 20X2) are shown in Table 14.9.

Table 14.9 Balance sheets of X and Y

	X	Y
Fixed assets	15,000	3,200
Investment in Y	900	–
Net current assets	1,000	1,800
	16,900	5,000
Share capital	8,000	2,200
Reserves	8,900	2,800
	16,900	5,000

Suppose that X also has a subsidiary company and it is proposed to prepare consolidated accounts for the X group for the year ended 31 December 20X2. In order to concentrate on the associate, one could draft the initial consolidated balance sheet of the group as at that date before inclusion of the income of the subsidiary, but inclusive of the associate's figures. The effects of the equity method are shown in Table 14.10. There is an assumption here that there is no goodwill involved in the purchase and that no dividends are paid by the associate.

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Table 14.10 Initial equity accounting of Y

Fixed assets[a]	15,000
Investment in Y[b]	1,500
Net current assets[a]	1,000
	17,500
Share capital[a]	8,000
Reserves[c]	9,500
	17,500

Notes

[a] Assets and share capital of X only, since Y is an associated company and will therefore be shown in the group balance sheet as an investment.

[b] Cost	900
+ share of post-acquisition reserves = 30% × 2,000 (i.e. 2,800 – 800)	600
	1,500
[c] Reserves of X	8,900
+ group's share of post-acquisition reserves of Y (30% × 2,000)	600
	9,500

This illustration demonstrates the effect of equity accounting for the results of an associate in a group's balance sheet. This method is often known as a *one-line consolidation*. The effect is that the assets (Investment in Y) and claims (Reserves) have both been increased by €600 (the group's share of the post-acquisition profits of the associate). In a sense, the equity method *is* a proportional consolidation. The difference is that the proportion is added as one figure to the Investment, not as separate figures to the individual asset (and liability) accounts.

If, in the Table 14.10 example, dividends had been paid by the associate, then cash would have moved into the group and so the group cash figure would rise by the size of the dividend received. However, the net assets (= equity) of the associate would have fallen because it has paid out cash. So the 'investment in Y' would fall by the same amount as the cash rose.

Let us suppose that a total dividend of €1,000 was paid by Y to its various shareholders. X would receive 30 per cent of this, so that the double entry in its consolidated statements would be:

Debit:	Cash	300	
Credit:	Investment in associate		300

The consolidated profit and loss account would be unaffected by the dividend because X's share of the total profit had already been recorded.

14.7 Conclusion on group relationships

As an investor company's influence over its various investees grows, so the degree of inclusion of their net assets and results in the investor's group financial statements increases. This is represented in Table 14.11. An investment without 'significant influence' is accounted for under the cost method. An investment with 'significant influence' (but no more) is accounted for under the equity method. A

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jointly controlled investment might be accounted for by proportional consolidation. An investment with control or *dominant influence* is fully consolidated. These distinctions, in a real business situation, will often contain elements of uncertainty. The 20 per cent threshold for 'significant influence' is, of course, arbitrary.

Table 14.11 Degree of inclusion of investees in consolidated statements under IFRS

Investment	*Balance sheet*	*Income statement*
1. Less than significant influence (typically less than 20% of voting shares)	Investment treated as financial asset (see chapter 11)	Dividends, and any revaluation gains and losses
2. Significant influence: an associate (typically 20% or more of voting shares)	Investment measured by the equity method	Share of net income
3. Joint control: a joint venture entity	Proportionate consolidation or equity method	Proportionate consolidation or share of net income
4. Control but less than 100% ownership of voting shares: a subsidiary	Full consolidation; minority interest shown	Full consolidation; minority interest shown
5. Control and 100% ownership of shares: a wholly-owned subsidiary	Full consolidation	Full consolidation

Why it matters *Consolidated net assets would generally be the same whichever of methods 2 to 5 in Table 14.11 is applied to an investment; and the same goes for consolidated net income. However, many component figures will be different. For example, method 2 includes none of an investee's cash or sales in the group's financial statements; method 3 includes a proportion; and methods 4 and 5 include 100 per cent. This may have a major effect on the ratios calculated by investment analysts.*

For example, under IAS 31, joint venture entities can be accounted for by methods 2 or 3. Under method 2 (equity accounting), none of the joint venture's cash or sales will appear in the cash, liabilities and sales lines of the consolidated balance sheet and income statement. Under method 3 (proportional consolidation), the group's proportion of cash, liabilities and sales will be included. If joint ventures are important to the group (as they often are in large international groups), this may have a major effect on many of the ratios introduced in chapter 7. You may like to check which ones are affected.

14.8 Hope for international harmonization

Concentrating on consolidated statements is an important aspect of efforts towards international harmonization of financial reports for two reasons:

- investors who operate internationally are likely to be interested mainly in the performance and prospects of groups rather than the legal components of them; and

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- consolidated statements are not relevant for the calculation of taxable income or distributable income, and so national governments can be more relaxed about the rules.

In Europe, the voluntary adoption of IFRS or US accounting rules for consolidated statements became substantial by the late 1990s for large listed groups. Then it became specifically allowed under certain circumstances in the laws of several countries (beginning with Germany in 1998), as an alternative to complying with domestic rules. As mentioned elsewhere, the next stage has been compulsory use of IFRS for the consolidated statements of EU listed companies.

In addition to these moves, the IASB and the FASB are working together to remove differences between their rules and to co-ordinate new rules.

SUMMARY

- Most large economic enterprises operate as groups of legal entities, and so the accounting needs to present the state of affairs and performance of the group.
- A subsidiary is defined on the basis of control, although the exact definition varies internationally.
- There are other entities connected to the group by joint control or significant influence.
- A parent's financial statements generally show the cost of investments and the receipt of dividends from them, although, Danish, Dutch and Norwegian practice is to use the equity method for some investments.
- Consolidated statements include the parent and its subsidiaries as though they were a single economic entity.
- Companies often pay more for subsidiaries than the value of the individual identifiable net assets. The difference is goodwill, which is treated as an asset in most countries.
- The amortization or impairment of goodwill varies greatly internationally.
- Minority interests and intercompany transactions need to be accounted for.
- A rare but importantly different method of accounting for business combinations is uniting/merger/pooling accounting.
- In consolidated statements, associated enterprises and some joint ventures are accounted for by the equity method, although some sets of rules allow or encourage proportional consolidation for joint venture entities.
- Harmonization is more useful and easier if it concentrates on consolidated statements.

References and research

The documents of the IASB of particular relevance to this chapter are:

- IAS 22 (revised 1998), *Business Combinations*.
- IAS 27 (revised 2003), *Consolidated Financial Statements*.
- IAS 28 (revised 2003), *Accounting for Investments in Associates*.
- IAS 31 (revised 1998), *Financial Reporting of Interests in Joint Ventures*.

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- C. W. Nobes, and J. Norton, 'International variations in the accounting and tax treatments of goodwill, and the implications for research', *Journal of International Accounting, Auditing and Taxation*, Vol. 5, No. 2, 1996.
- C. W. Nobes, 'An analysis of the international development of the equity method', *Abacus*, February 2002.

Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

14.1 Under IFRS, the definition of a subsidiary is restricted to any entity:

(a) Controlled by another enterprise.
(b) In which another enterprise owns a majority of the voting shares.
(c) Significantly influenced by another enterprise.
(d) That meets the legal definition of a subsidiary in the country concerned.

14.2 Under IFRS, significant influence over an investee is presumed to exist only when an investor has:

(a) The power to govern the financial and operating policies.
(b) Ownership of 20 per cent or more of the voting rights.
(c) Ownership of 10 per cent or more of the voting rights.
(d) Ownership of more than 50 per cent of the voting rights.

14.3 The equity method involves valuing an interest in an enterprise:

(a) At stock market value.
(b) At lower of cost and market value.
(c) At proportion of net assets.
(d) At cost plus dividends received.

14.4 The treatment of jointly controlled companies in consolidated financial statements in the US is to:

(a) Fully consolidate them.
(b) Proportionally consolidate them.
(c) Hold them by the equity method.
(d) Hold them as investments, generally at cost.

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14.5 Under IFRS, goodwill is calculated as the cost of the subsidiary minus:

(a) The book value of the subsidiary's identifiable net assets.
(b) The fair value of the subsidiary's identifiable net assets.
(c) The market value of the subsidiary's shares at the date of acquisition.
(d) The fair value of the subsidiary's tangible assets.

14.6 The amortization of goodwill on consolidation is:

(a) Tax-deductible in Germany but not in the US or the UK.
(b) Tax-deductible in Germany and the US but not in the UK.
(c) Tax-deductible in all three countries.
(d) Tax-deductible in none of the countries.

14.7 The treatment of jointly controlled companies in consolidated financial statements in France is generally to:

(a) Fully consolidate them.
(b) Proportionally consolidate them.
(c) Hold them by the equity method.
(d) Hold them as investments, generally at cost.

14.8 The writing-off of goodwill against reserves (compared with amortization) tends to:

(a) Understate assets and income.
(b) Overstate assets and income.
(c) Understate assets and overstate income.
(d) Overstate assets and understate income.

14.9 In which country do listed parent companies *not* have to disclose their own individual company balance sheets to the public?

(a) United Kingdom.
(b) United States.
(c) France.
(d) Germany.

Exercises

Feedback on the first two of these exercises is given in Appendix E.

14.1 Explain the concepts of:

(a) subsidiary;
(b) joint venture;
(c) associate;
(d) trade investment which is none of the above.

Outline and discuss the usual approaches to the accounting treatment in each case in consolidated statements.

14.2 A Co. owns 75 per cent of the shares in B Co., bought when the reserves of B were €200,000. The individual balance sheets of A and B as at 30.6.20X2 are given in Table 14.12. During the year, B has sold goods to A at a profit margin of 25 per cent on cost. €50,000 of these goods remain in A's closing inventory as at 30.6.20X2. Also B owes A €2,000 as at 30.6.20X2. Prepare the consolidated balance sheet as at 30.6.20X2.

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Table 14.12 Individual balance sheets as at 30.6.20X2

	A *000s*	*B* *000s*
Assets		
Land and plant	1,000	200
Investment in B	275	–
Inventory	600	400
Debtors (receivables)	200	40
	2,075	640
Liabilities		
Creditors (payables)	30	16
	2,045	624
Represented by:		
Ordinary €1 shares	1,000	100
Reserves	1,045	524
	2,045	624

14.3 The balance sheets of A and B as at 31 December 20X4 are as shown in Figure 14.8. In addition:

(a) A had acquired 37,500 shares in B in 20X0 when there was a debit balance on the reserves of €3,000.

(b) B purchases goods from A, providing A with a gross profit on the invoice price of $33\frac{1}{3}$ per cent. On 31 December 20X4 the inventory of B still included an amount of €8,000, being goods purchased from A for €9,000.

Prepare the consolidated balance sheet of A and its subsidiary as at 31 December 20X4.

Figure 14.8 Balance sheets for A and B as at 31 December 20X4

		A *000s*		*B* *000s*
Land and buildings	108		64	
less Depreciation	20	88	32	32
Plant and machinery	65		43	
less Depreciation	25	40	29	14
		128		46
Investment: shares in B		35		–
Inventory	25		27	
Debtors	48		21	
Bank	22		6	
	95		54	
Creditors (current)	112	(17)	34	20
		146		66
Ordinary €1 shares		100		50
Share premium		10		–
Reserves		36		16
		146		66

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14.4 Two companies, A and M have balance sheets as at 31 December 20XX as shown in Table 14.13.

Table 14.13 Balance sheets for A and M as at 31 December 20XX

	A	*M*
Plant and machinery	6,000	7,000
Net current assets	5,000	2,000
	11,000	9,000
Ordinary shares (€1)	9,000	6,000
Reserves	2,000	3,000
	11,000	9,000

A acquired the whole of the share capital of M on the basis of a one-for-one share exchange as at the above date (not yet reflected in A's balance sheet), at which point the market (unit) values of their respective shares were €4 for both A and M. The fair values of M's tangible assets as at 31 December 20XX were:

Plant and machinery	€8,000
Net current assets	€2,500

Prepare consolidated balance sheets under both the acquisition and merger methods. Comment on the major differences that emerge.

14.5 (a) How would you define goodwill?

(b) Three possible accounting treatments of goodwill are:

(i) retain goodwill as an asset to be amortized over its estimated useful life;
(ii) retain goodwill as an asset indefinitely, subjecting it to annual impairment tests;
(iii) write off goodwill to reserves at the time of acquisition.

Discuss briefly the principles underlying each of these three approaches. Indicate your preferences.

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15

Foreign currency translation

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- distinguish between currency conversion, the translation of transactions, and the translation of financial statements;
- explain and simply illustrate the accounting treatment of transactions expressed in foreign currencies;
- discuss alternative views on the recognition of unsettled gains and losses arising from currency differences;
- outline alternative methods for translating financial statements expressed in foreign currencies;
- describe, illustrate and contrast the closing rate and temporal methods of translation;
- state and appraise the basic IAS 21 requirements for translation of financial statements expressed in foreign currencies.

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15.1 Introduction

Several linked issues need to be discussed under the heading of currency translation. First, a note on technical terms is necessary.

1. *Conversion* is the process of changing one currency into another, as typically conducted in a bank or *bureau de change*.
2. *Transactions translation* is the accounting activity whereby transactions in foreign currency are re-expressed in the currency of the enterprise's accounting records or financial statements. For example, sales to foreign customers or loans from foreign banks might be denominated as amounts of foreign currency. They will need to be translated into the home currency in order to be included in the accounting records of the enterprise.
3. *Translation of financial statements* is the accounting activity whereby financial statements are re-expressed in another currency. Typically, this means the translation of a foreign subsidiary's statements into the parent currency for the purpose of preparing consolidated financial statements for the group.

This chapter does not deal with point 1 above. It does deal with point 2. It only deals with point 3 for the main purpose of group accounting. For other purposes, e.g. assessment of an overseas company by an analyst, the users of foreign financial statements can choose their own methods of translation – usually the exchange rates ruling on the balance sheet date. The context of the discussion in this chapter is the IASB's standard in this area, IAS 21, *The Effects of Changes in Foreign Exchange Rates*.

Language can be a problem here. For example, accounting terms are sometimes not easily translated:

English terms	**French terms**
Conversion	*Change*
Translation	*Conversion*

Consequently, an inexpert translator may mislead the readers of an annual report that has been translated from one language to another.

15.2 Transactions

This section deals with the problems of a company that has no subsidiaries or parent but engages in foreign trading activities.

Why it matters

Business is increasingly international, and whenever an enterprise has any dealings abroad it will be involved in foreign currencies. Since it must keep its accounting records and prepare accounting reports in its own 'home' currency, figures expressed in foreign money units need to be re-expressed in home units. If foreign currency exchange rates remain absolutely constant, i.e. if the value of one currency in terms of the other does not change, then no difficulties arise. However, this is generally not the case, as exchange rates can – and do – fluctuate considerably over relatively short periods. Clearly, the introduction of the euro in Europe has helped for some countries,

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but the problem remains for a company in euroland that ever has to deal with subsidiaries, lenders, customers or suppliers from outside the area. In practice, it is possible to reduce the risk of exposure to currency fluctuations by a policy of hedging, i.e. of creating asset and liability risks such that the effects of currency movements will tend to cancel out. This is a complicated area, beyond the scope of an introductory text.

The easiest situation is where an overseas transaction is completed within an accounting period. Consider, for example, a Ruritanian company that keeps its accounts in the local currency, R, but sells goods to a Swiss company in May 20X9 for SF750,000. Payment is received in August 20X9. Assuming a 31 December year end, in May the company will record a debtor in its records of the Ruritanian equivalent of SF750,000 at the exchange rate in May 19X9 of R 1 = SF 3.5544, i.e. the transaction will be recorded at R211,006. Suppose that, when payment is received in August, the exchange rate has moved to 3.7081 so that the actual amount received is R202,260. The loss on exchange of R211,006 – R202,260 = R8,746 should be reported in the income statement. So the formal double entry in May will be:

Debit:	Debtors	211,006	
Credit	Sales		211,006

and in August:

Debit:	Bank	202,260	
Debit:	Loss on exchange	8,746	
Credit:	Debtors		211,006

Any profit on exchange would be credited to the income statement.

Similarly if, in May 20X9, the Ruritanian company bought a fixed asset, such as a machine, for SF750,000, this would be translated and recorded into its accounts as a debit to the Machinery account of R211,006. The subsequent exchange rate change would not affect the recorded amount for the machine, but any gain or loss on settlement would be charged or credited to the income statement.

However, suppose that a sale or purchase transaction is not completed by the accounting year end, in the sense that a debtor or creditor is still outstanding. In this case, the debtor or creditor needs to be translated into the home currency so that it can be shown in the balance sheet, and a gain or loss might arise. Consider now a Ruritanian company that bought a machine from a Belgian company in November 20X8 for €11 million when the exchange rate was R1 = €62.09. At the accounting year end of 31 December 20X8, the payment for the machine had not been made. The machine would be recorded at R177,162, by use of the November rate. However, the creditor entry in the closing balance sheet would be recorded at the 31 December rate of R1 = €61.29, i.e. at R179,475. This would mean that a loss on exchange of R2,313 should be recognized in the income statement of 20X8. If the exchange rate continues to move in the same direction until the transaction is settled in January 20X9, then a further loss will be recognized, this time in the 20X9 income statement.

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Controversy arises on the accounting treatment in cases like that in the previous paragraph but where exchange rates move such that a *gain* might be recognized at the 31 December 20X8 year end. Under IFRS rules, and consistent with the IASB Framework discussed in chapter 3, fair presentation demands that unsettled gains should be recognized as well as unsettled losses. These gains could even be called 'realized' in the same way as are profits on credit sales where the customer has not yet paid. In some European countries (basically those on the right of Figure 5.2, e.g. Germany or France), the traditional accounting thinking holds that such a treatment is imprudent, and that gains should be recognized on settlement only.

In Germany, for example, it is normal in unconsolidated statements to translate foreign currency debtors or creditors at the higher of historical rate and closing rate for creditors, and at the lower of historical rate and closing rate for debtors. This recognizes losses but not gains. It also, on average, records lower debtors and higher creditors than would be recorded under IAS accounting. For example, BASF's 2002 annual report notes:

> **Translation of foreign currency items:** The cost of assets acquired in foreign currencies as well as revenues from sales in foreign currencies are recorded at the rates on transaction dates.
>
> Short-term foreign currency receivables and liabilities are valued at the rate on the balance sheet date. Long-term foreign currency receivables are recorded at the rate prevailing on the acquisition date or at the lower rate on the balance sheet date. Long-term foreign currency liabilities are recorded at the rate prevailing on the acquisition date or at the higher rate on the balance sheet date. Individually hedged receivables or liabilities are recognized at hedge rates.

In France, year-end rates are used but, in individual company practice, gains are stored in the balance sheet as deferred credits until they are settled.

The discussion so far has concerned transactions that are settled or are soon to be settled. Similar issues arise when there are long-term foreign currency items, such as a ten-year foreign currency loan. Suppose that a UK company borrowed $10,000 from a US bank in London for five years, from 20X4 to 20X9. At each year end, the loan must be shown in pounds sterling in the company's balance sheet. Under IFRS and in most countries (though not under normal German practice – see above), the year-end rate would be used. So, assuming the exchange rates shown below, the following translations would have occurred at the first two year ends:

31.12.X4	$10,000 at £1 = $1:	£10,000
31.12.X5	$10,000 at £1 = $1.50:	£6,667
	Gain in 19X5	£3,333

Because in our example the pound strengthened against the dollar during 20X5, a gain is implied. For short-term gains, companies in some countries (such as the Netherlands and the United Kingdom, and under IFRS) would recognize the gain in the 20X5 income statement. Others (such as those in France) would defer it. However, it seems a stretch of terminology to say that the £3,333 gain is 'realized' in 20X5, as it will not be settled until 2009. However, IAS 21 demands that such a gain should be taken to income.

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15.3 Translation of financial statements

This section concerns the translation of a foreign subsidiary's financial statements into the currency of the parent for the purposes of preparing consolidated statements. When translating any particular item, we can take two basic possible views: either we can use the exchange rate ruling when the item was created (historical rate), or we can use the exchange rate ruling when the item is being reported (current rate). Since we can apply this choice to each item one at a time, it is clear that many different combinations are possible. Two that are commonly used are outlined below.

15.3.1 Current rate method

This method of translation is based on the idea that the holding company has a net investment in the foreign operation, and that what is at risk from currency fluctuations is this net financial investment in the equity of the foreign enterprise. All assets and liabilities will be translated at the current rate (balance sheet date rate). Revenues and expenses are translated at the appropriate current rate, or (for simplicity) at the average rate for the year. Exchange differences will arise if the closing rate differs from the previous year's closing rate, or from the rate on the date when the transaction occurred. These differences are taken to equity. Under IFRS, such gains and losses are shown in the statement of changes in equity.

Another way of looking at this method is that it applies when the 'functional currency' of the foreign subsidiary is not the parent's currency but the currency of the subsidiary's country. Therefore, the amounts need to be translated into the parent's currency for consolidation, assuming the usual case that the group statements are presented in the parent's currency. This way of explaining the method was adopted in the 2003 revision to IAS 21.

15.3.2 Mixed rate (temporal) method

This method is based on the idea that any foreign operations are simply a part of the group that is the reporting entity, where some of the individual assets and liabilities of the group just 'happen' to be abroad. In effect, therefore, the temporal method amounts to treating all the individual transactions and balances of the foreign subsidiary as though they were those of the parent. The valuation basis used to value the assets and liabilities determines the appropriate exchange rate. Those assets recorded on a historical cost basis would be translated at the historical rate – the rate ruling when the item was established. Assets recorded on a current value basis would be translated at the current rate. Revenues and expenses should be correspondingly translated at the rate ruling on the date when the amount shown in the accounts was established. For many items (assuming an even spread of trading), this might be at the average rate for the year. However, for depreciation of an asset held at historical cost, the appropriate exchange rate would be the historical rate. Gains and losses arising from translation differences go to the income statement under this method.

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It is important to avoid the assumption that the temporal method automatically means using historical exchange rates. 'Temporal' means literally 'at the time', i.e. consistent with the underlying valuation basis. So the temporal method *does* mean using historical exchange rates *when applied to historical cost statements*, but using current exchange rates *when applied to current value accounts*.

In terms of 'functional currencies', this method is appropriate when the subsidiary's functional currency is the currency of the parent. If the subsidiary operates in a way that is dominated by its parent's currency, then it can be seen as conducting all its transactions in the parent's currency. This will have the same effect as using historical exchange rates for historical transactions.

15.3.3 The methods compared

The use of the current rate method is intuitively simpler. That is, it is normal to assume that the subsidiary's country's currency is the one most relevant for its operations. Indeed, this is the method generally used around the world for foreign-currency balance sheets.

IAS 21 (as revised in 2003) says that an entity should identify its functional currency by considering the currency of its sales prices and its costs. In some cases, it may be clear that a subsidiary is a mere sales conduit of the parent and can charge prices linked to the parent's currency. However, the identification of functional currency will often require the balancing of several factors.

Activity 15.A

The accounting policy statement for BASF (a German company) for 2002 regarding foreign currency financial statements is given thus:

> The local currency is the functional currency of BASF subsidiaries and joint ventures in North America, Japan, Korea, China, Brazil, and Singapore. Translation therefore takes place using the balance sheet method. Balance sheet items are translated to euros at year-end rates except equity accounts at historical rates. Expenses and income are translated at monthly average rates and accumulated for the year. The effects of rate changes are shown under 'currency translation adjustment' as a separate component of equity and are treated as income or expense only when a company is disposed of.
>
> The euro is the functional currency for the remaining companies outside the eurozone. Remeasurement therefore takes place using the temporal method: fixed assets except loans, and paid in capital are translated using historical rates. The other assets, liabilities, and provisions are translated using the year-end rates. Expenses and income are converted at quarterly average rates cumulated to year-end figures, except for those items derived from balance sheet items converted at historical rates, which are also translated at historical rates. Foreign exchange gains or losses resulting from the remeasurement process are included in other operating expenses or income.

It is clear that BASF is using two different methods for different types of subsidiary. Which methods are used for which type of subsidiary?

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Feedback For 'distant' subsidiaries, such as those in America and Asia, BASF is using the closing rate, and taking gains to equity. This means that the current rate method is being used. For the other subsidiaries, for which it is stated that the euro is the functional currency, a mixture of rates is used, and gains and losses are taken to income. This means the temporal method is used here. The implication is that for these subsidiaries, all the group accounting is done as though the subsidiaries had used euros. Note, also, the use of the word 'converted', which should really be 'translated'.

15.4 A numerical illustration

The closing rate and temporal methods are illustrated below for a French parent with a subsidiary in a foreign country where the currency unit is T. Suppose that Home SA established a 100-per-cent-owned subsidiary Away Ltd, on 1 January 20X1 by subscribing €25,000 of shares in cash when the exchange rate was T 12 to the €1. Away Ltd raised a long-term loan of T100,000 locally on 1 January 20X1 and immediately purchased equipment costing T350,000, which was expected to last ten years with no residual value. It was to be depreciated under the straight-line method.

Table 15.1 Away Ltd's financial statements

Income statement for 20X1	*T*	*€ (current)*	*€ (temporal)*
Sales	450,000	40,909[a]	40,909[a]
Less Cost of sales	(360,000)	(32,727)	(32,727)
Gross Profit	90,000	8,182	8,182
Less Depreciation	(35,000)	(3,182)	(2,917)[b]
Other expenses	(15,000)	(1,364)	(1,364)[a]
Net profit	40,000	3,636	3,901
Balance sheet as at 31 December 20X1			
Equipment at cost	350,000	35,000[d]	29,167[b]
Less Depreciation	(35,000)	(3,500)	(2,917)[b]
	315,000	31,500	26,250
Inventory at cost	105,000	10,500	10,000[c]
Net monetary current assets	20,000	2,000	2,000[d]
Less Long-term loan	(100,000)	(10,000)	(10,000)[d]
	340,000	34,000	28,250
Share capital	300,000	25,000[b]	25,000[b]
Retained profits	40,000	3,636	3,901
Exchange differences	—	5,364	(651)
	340,000	34,000	28,250

Notes on exchange rate used:
[a] T 11.0 to €1.0 (average rate)
[b] T 12.0 to €1.0
[c] T 10.5 to €1.0
[d] T 10.0 to €1.0 (closing rate)

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Table 15.1 shows the financial statements of Away Ltd for 20X1, during which the relevant exchange rates were:

	T to €
1 January	12.0
Average for year	11.0
Average for period in which closing inventory acquired	10.5
31 December	10.0

The 'T' column in Table 15.1 shows the original balance sheet amount in the foreign currency. The '€ (current)' column shows translation using the closing rate method (i.e. assuming that the T is the subsidiary's functional currency). Note that, under any method, the share capital is translated at the historical rate. The exchange difference could be worked out in detail but is also the balancing figure in shareholders' funds. The '€ (temporal)' column shows the translation using the temporal method, involving the historical rate for certain items (i.e. assuming that the € is the subsidiary's functional currency). The profit figure in the balance sheet comes from the income statement. The exchange loss could be worked out in detail but, again, is also the balancing figure. Under IAS 21, the €651 exchange loss would be recorded in the income statement.

Why it matters

By the time that the subsidiary's translated statements from Table 15.1 are consolidated into the group statements, the translation method chosen may have a major effect on the financial statements and the interpretation of them. The exchange rate movements in Table 15.1 are fairly small, but still group profit would be affected by inclusion of the different figures, where:

	€
closing rate profit	3,636
temporal method profit	3,901
less translation loss	(651)
	3,250

The difference between the closing rate and temporal method could have a major effect on group earnings.

The apparent level of group gearing (see chapter 7) will also be affected. One measure of gearing is made by a comparison of long-term debt with shareholders' funds. In this case, the subsidiary's figures (which will then affect the group financial statements) show:

$$\text{Current rate gearing} = \frac{10{,}000}{34{,}000} = 29.4 \text{ per cent}$$

$$\text{Temporal method gearing} = \frac{10{,}000}{28{,}250} = 35.4 \text{ per cent}$$

So, in this case, the temporal method will lead to the presentation of higher gearing figures, although it should be noted that different circumstances could lead to the opposite relationship. Remember that the underlying events are identical for both sets of figures.

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SUMMARY

- There are several topic areas that might be considered under the heading of foreign currency translation, and there are some linguistic difficulties in making it internationally clear what topic one is discussing. This chapter deals with foreign currency transactions of individual companies and then with the translation of the financial statements of foreign subsidiaries.
- Transactions are generally translated at the rate of exchange ruling on the date of the transaction, and so asset purchases are generally frozen into home currency at the date of purchase. Outstanding debtors and creditors are translated in most countries at current rates, but in some countries at the worse of transaction and current rates, thereby not recognizing translation gains until settlement. In some countries where current rates are used, resulting gains are thereby recognized but postponed.
- For translation of foreign subsidiaries' financial statements, the current rate (foreign currency functional) is the most popular internationally. Gains and losses that result from this process are taken to reserves. Nevertheless, the use of historical rates for certain items (parent's currency functional) may be found, and this can have a large effect on group financial statements.

References and research

A key IASB reference is

- IAS 21, *The Effects of Changes in Foreign Exchange Rates*.

Some further insight into the issues is given by the following two papers. Do not read one without also reading the other. The papers are:

- P. Feige, 'How "uniform" is financial reporting in Germany? – The example of foreign currency translation', *European Accounting Review* Vol. 6, No. 1, 1997.
- C. Nobes and G. Mueller, 'How "uniform" is financial reporting in Germany?: some replies', *European Accounting Review*, Vol. 6, No. 1, 1997.

Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are in Appendix D at the end of this book.

15.1 Under the temporal method, an historical rate of exchange is used to translate:

(a) Receivables.
(b) Inventories valued at net realizable value.
(c) Sales.
(d) Inventories valued at LIFO.
(e) Long-term loans.

15.2 When should the temporal method be used, according to IAS 21?

(a) Never.
(b) In most cases.
(c) When a subsidiary's functional currency is that of the parent.
(d) When exchange rates are fixed.
(e) When it leads to more prudent income calculations.

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15.3 When should the current rate method be used, according to IAS 21?

(a) In all cases.
(b) In all cases, unless it would fail to give a fair presentation.
(c) When subsidiaries operate in their own currency independently of the parent.
(d) When exchange rates are fixed.
(e) When it leads to more prudent income calculations.

15.4 In consolidated financial statements prepared under which regulatory system is it least likely that gains from unsettled foreign currency receivables will be found?

(a) UK system.
(b) US system.
(c) IFRS system.
(d) German system.

15.5 IAS 21 allows a company to choose the functional currency that it would prefer.

(a) True.
(b) False

15.6 A foreign subsidiary's cash balance will be translated to identical reporting currency figures whatever its functional currency is.

(a) True.
(b) False.

Exercises

Feedback on the first two of these exercises is given in Appendix E.

15.1 A loan is made to a company of $20,000, which is equal to €10,000 at the date of the loan during year 1. The loan is denominated in dollars. At the end of year 1 the loan is translated as €9,500, at the end of year 2 as €10,500 and during year 3 it is repaid, the proceeds being converted to €10,600. The company keeps accounts in euros.

(a) Show the accounting entries for each year, explaining your workings.
(b) State how, under the appropriate IFRSs, you would deal with the gains or losses on exchange for each year, at that time. Justify your answer.

15.2 Home Inc. (an American company) has a wholly owned subsidiary, S, which it acquired on 1.1.X0. The balance sheets of S as at 1.1.X0 and 31.12.X0 are as set out in Figure 15.1 in foreign currency (FC) units:

Figure 15.1 Balance sheets for S as at 1.1.X0 and 31.12.X0

		1.1.X0 (FC units)		*31.12.X0 (FC units)*
Fixed assets		450		330
Inventory	240		360	
Debtors	120		240	
	360		600	
Creditors	210	150	240	360
		600		690
Ordinary share capital		600		600
Retained profits		—		90
		600		690

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The income statement account for the year 31.12.X0 is as set out in Figure 15.2

Figure 15.2 Income statement for S on 31.12.X0 (FC units)

Sales		1,500
Cost of sales (240 + 1,200 − 360)	1,080	
Depreciation	120	1,200
Net profit		300
Taxation		150
		150
Proposed dividend		60
Retained profit		90

Translate the financial statements of S using both (a) the closing rate method and (b) temporal method, given the following:

On 1 January 19X0, $1 = FC3.0
On 30 June 19X0, $1 = FC2.5
On 31 December 19X0, $1 = FC2.0

15.3 'The variety of possible methods of foreign currency translation, and the different ways of treating gains arising, show that adequate harmonization for international comparison purposes is a long way away'. Discuss.

15.4 The stated accounting policy treatment for foreign currency translation for SKF, a Swedish company, for 2002 is as follows:

Translation of foreign financial statements
The current rate method is used for translating the income statements and balance sheets into Swedish kronor as the majority of subsidiaries are considered independent. All balance sheet items in foreign subsidiaries have been translated in Swedish kronor based on the year-end exchange rates. Income statement items are translated at average exchange rates. The translation adjustments that arise as a result of the current rate method are transferred directly to shareholders' equity.

For the translation of financial statements of subsidiaries operating in highly inflationary economies, the Group applies the monetary/nonmonetary method (MNM-method). Monetary balance sheet items are translated at year-end exchange rates and non-monetary balance sheet items, as well as related income and expense items, are translated at rates in effect at the time of acquisition (historical rates). Other income and expense items are translated at average exchange rates. Translation differences that arise are included in the related lines in the income statement.

Translation of items denominated in foreign currency
Transactions in foreign currencies during the year have been translated at the exchange rate prevailing at the respective transaction date.

Accounts receivable and payable and other receivables/payables denominated in foreign currency have been translated at the exchange rates prevailing at the balance sheet date. Such exchange gains and losses are included in other operating income and other operating expense. Other foreign currency items have been included in financial income and expense net.

Write a brief memorandum, in non-technical language, explaining the meaning and significance of these policies.

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16

Accounting for price changes

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- explain the meaning of inflation;
- explain the significance of differences between historical cost profit and replacement cost profit;
- illustrate and discuss simple examples of different concepts of capital maintenance;
- prepare and discuss simple financial statements using general price-level adjustments;
- prepare and discuss simple financial statements using current replacement cost accounting;
- explain the implications of net realizable value, and of deprival value, as bases for the preparation of financial statements;
- outline the relevant regulations from IAS and EU sources, and the practice in certain countries.

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16.1 Introduction

This chapter looks at some of the problems involved in adjusting accounting information for general and specific price changes. The chapter looks first at inflation, then at the reasons why inflation causes conventional profit figures to be unrealistic for some purposes, and then at the problems that follow from this lack of realism. After that, there is an examination of the possible adjustments to correct financial statements for general and specific price changes, and of actual accounting systems proposed in Europe and elsewhere to deal with the problems caused by changing prices.

Inflation is a general increase in prices that causes a fall in the purchasing power of money. The causes of inflation are widely discussed and disputed, but they are problems of economics rather than of accounting: the average of prices faced by one particular consumer will change at a different rate from the average faced by another. Again, there will be a difference between price changes faced by consumers and those faced by producers. However, one generally available measure of inflation is an *index of retail prices*.

Indices of retail prices are produced on a monthly basis by official statistical departments in most countries. There are many technical problems relating to the choice of items involved, their weighting and delays in the collection of information. For the input costs and output prices of a particular business, such a general index is not likely to be very informative; the costs of different raw materials and capital equipment may move up (and down) at very different rates. Therefore, some agencies also produce specific price indices that cover various raw materials, intermediate outputs and capital equipment. Some companies keep their own very specific price indices, and of course actual current costs can be discovered from invoices or price lists. It is obvious that specific price information is relevant to the planning and budgeting of a business; how to take account of it in the reporting of past financial results is not so clear.

Why it matters *General inflation rates can be significantly different between countries at any time and, within one country, inflation rates may be very significant and may vary sharply in significance at different times. Ratio analysis over time, or comparison between enterprises in different countries with different inflationary conditions, will be significantly affected. The interpretation of such analysis must take full account of the implications, developed below, of these changes and differences.*

16.2 Effects of price changes on accounting

The effects of price changes are at their clearest when considering the valuation of assets in a conventional balance sheet. For example, land and buildings may be recorded and added together at a variety of values, including historical cost and subsequent valuations. Similar properties may be recorded and added together at very different values because they were bought at different times. For those users of a balance sheet who are expecting to gain information about the value of a

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business, such a balance sheet may be very misleading. Proposed solutions for this problem will be examined later.

The effects on profit measurement are more complicated. Normally, three main deficiencies are identified. In each case the problem concerns *matching* – one of the conventions introduced in chapter 3 as an important rule in the calculation of profit by the comparison of revenues with expenses. The point here is that, unless adjustments are made to correct for changing prices, some expenses based on *past* costs will be matched against revenues based on *current* sales prices. It is worth exploring this whole issue in some detail.

Activity 16.A

On 1 January, Mr Jones starts off in business with €100. His transactions are as follows:

2 January	Buys one bag, as inventory, for €40.
4 January	Sells one bag for €50.
6 January	Buys one bag for €44 (the replacement cost rose on 3 January).

Prepare balance sheets on 3 January and on 7 January, and an income statement for the intervening period, using conventional accounting practice.

Feedback The required financial statements are set out in Figure 16.1.

Figure 16.1 Financial statements for Jones (€)

Balance sheet 3 January

Inventory	40	Capital	100
Cash	60		
	100		100

Balance sheet 7 January

Inventory	44	Capital	100
Cash	66	Retained profit	10
	110		110

Income statement so far

Sales	50
Cost of sales	40
	10

So Jones has made a profit of €10. This, of course, is the usual accounting approach. But it is important to notice that there are really two stages in the progress from 1 January to 7 January. Between 1 January and 5 January, after the sale was made, Jones has turned €100 cash into €110 cash. On 5 January he actually has physically

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€110 cash and nothing else. Then between 5 January and 7 January he has changed €110 cash into €66 cash plus a bag. Since the second bag cost €44 and we are recording all our resources at original, or historical, cost it necessarily follows that we show total resources of €110 on both 5 January and 7 January. The 5 January balance sheet was as given in Figure 16.2.

Figure 16.2 Balance sheet for Jones as at 5 January (€)

Balance sheet 5 January			
Cash	110	Capital	110
	110		110

Comparing this 5 January position with the 3 January and 7 January balance sheets confirms that:

1. a profit of €10 was made between 3 January and 5 January; and
2. no profit or loss at all was made between 5 January and 7 January.

Jones is running a business, of course. He has to live. So, on 8 January, he decides to withdraw the business profit for his own spending purposes. If he takes €10 out, then the business still has the same amount of capital as originally put in. This €10 must therefore be genuine gain, so that it can apparently be withdrawn from the business without reducing the resources of the business. So we can draw up our balance sheet, after the withdrawal, as given in Figure 16.3.

Figure 16.3 Balance sheet for Jones as at 9 January (€)

Balance sheet 9 January			
Inventory	44	Capital	100
Cash	56		
	100		100

Activity 16.B Compare the physical possessions of Jones's business on 3 January with those on 9 January.

Feedback In physical terms, the business possesses on 3 January one bag and €60 in cash. On 9 January it possesses one bag and €56 in cash.

By simple subtraction, using the figures in Activity 16.B, we can compare the physical position between 3 January and 9 January in terms both of bags and of euros. In terms of bags, we are comparing one bag with one bag; in terms of

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bags, the business is exactly the same size as it was before. In terms of euros, the business had 60 on 3 January and 56 on 9 January; the business has therefore got smaller by four euros.

Something must be wrong somewhere. The accountant has shown us that there is a 'gain' of €10 over and above the original €100 capital put in. Jones has therefore withdrawn the €10, and yet the result is *not* that the business is 'back where it started'. The result is that the business has *got smaller* by €4.

This suggests that either the physical comparison is wrong, or the income statement prepared in Activity 16.A is wrong. If the physical comparison is correct, then the 'gain' of €10 mentioned above is not genuine! Further thinking is needed. On 5 January we had, in physical terms, as we have already seen, a pile of 110 euros. We have also already seen that the profit of €10 was made by 5 January. It therefore follows that the accountant's statement at 5 January is identical with the actual physical position at that date. It is obvious that since the physical position and the accounting position were identical as at 5 January, the difference between the two positions must have occurred *after* 5 January. But only one event has happened after 5 January. This was the purchase of the second bag on 6 January. So the problem *must* be something to do with the accounting treatment of the second bag.

Question: Why did Jones have to buy a second bag for €44? The answer is: because the business is a going concern and he had sold the first bag (for €50). He would not have bought the second bag if he had not sold the first one. It seems, therefore, that the selling of the first bag and the buying of the second bag are really two parts of one complete action. If he had not sold the first bag and had not bought the second bag, he would clearly have ended up with the same amount of cash on 7 January as he had on 3 January, i.e. €60. If he sells the first bag for €50 and buys a second bag for €44, he will end up with €6 more cash on 7 January than he had on 3 January. So the result of selling the first bag and buying a second bag *as compared with doing neither*, is a gain of €6. We can show this as follows:

	€
Sales	50
Costs incurred as a direct result of making sale	44
Profit	6

We are now suggesting a profit of €6, as compared with the earlier suggestion of €10. This will presumably reduce the maximum drawing payable by €10 – €6 = €4. And remember that we argued earlier that the difference between the original accountant's calculations and physical reality – the amount by which Jones' business had unintentionally 'got smaller' – was €4. We have produced an accounting calculation that now agrees with actual physical events.

The essential conclusion from the above is simple. It is that it may be more informative if the cost of sales figure related to any particular sale is calculated as equal to the *cost of the resulting replacement*, rather than to the cost of the item actually sold. This raises a difficulty. In order to be able to transfer this higher replacement figure out of the balance sheet and into the income calculation, the higher replacement figure must first be recorded in the balance sheet. The

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complete picture is most easily seen by a series of balance sheets, as set out in Figure 16.4.

Figure 16.4 Balance sheet for Jones at various dates

1 January			
Cash	100	Capital	100
	100		100

3 January			
Bag	40	Capital	100
Cash	60		
	100		100

3 January (restated on a replacement cost basis)			
1st bag	44	Capital	100
Cash	60	Restatement gain	4
	104		104

5 January			
Cash	110	Capital	100
		Restatement gain	4
		Profit	6
	110		110

7 January			
2nd bag	44	Capital	100
		Restatement gain	4
Cash	66	Profit	6
	110		110

We have solved a major problem. On the assumption that Jones wishes to carry on selling and buying bags, this is the correct answer. We have shown the accountant how to produce a profit figure that actually makes physical sense, and one that Jones can actually believe. But we have created another difficulty. The statement from the accountant shows not only a profit of €6, but also a separate, different gain of €4. This gain of €4 occurred earlier than the profit. The gain was included in the balance sheet of 3 January and the profit did not appear until the sale on 4 January. We know that this 'gain' is not the same as profit – the whole point of all this is that the 'total' profit, i.e. the total increase in the capacity of the business to do things, is only €6. So if the 'gain' is not profit, what is it?

In the most simple of terms, it is the double entry for an increase in the recorded figure for an item of inventory.

Why it matters *The above discussion and illustration make it clear that the effect of the replacement cost approach to inventory valuation is to split the historical cost profit into two*

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distinct elements, namely the holding gain, and the gain through operating activities (known usually as the current operating profit). Thus we have:

Historical cost profit	=	current operating profit	+	holding gain
[10]	=	[6]	+	[4]

It is clear that additional information is given by reporting the two elements separately. The holding gain, other things equal, must be kept in the business to maintain the volume of activity; the money that it represents has to be spent on the replacement item of inventory. Since the money has to be used internally, it perhaps should not be seen as available for distribution to owners and, since the holding gain has to be retained, it perhaps should not be seen as an increase in the real wealth of the business, considered as a going concern.

The use of historical costs fails to reveal this information, producing a reported profit that seems too high.

The above discussion of replacement cost as applied to inventory suggests that one way of looking at the value of inventory is its replacement cost, because this is what the business would have to pay if it did not already own the inventory or if it were deprived of it. Similarly, the using-up of inventory can be said to involve an expense that is equal to its replacement cost rather than its historical cost. This would suggest a *cost of sales adjustment* to historical cost profit, since the latter only allows for the historical cost of inventory used.

A similar problem concerns depreciation expenses, which may in some sense be inadequate because they are based on past costs (i.e. the historical cost of fixed assets). For example, one year's usage of a machine with no scrap value and a five-year life may more realistically be said to incur a charge of one-fifth of the replacement cost of the asset rather than one-fifth of its historical cost. This would suggest a *depreciation adjustment* to historical cost profit, since the latter only allows for the historical cost of fixed assets used up.

A third problem concerns gains and losses on monetary items. A company that borrows money in inflationary periods for long-term use is making a gain, in the sense that the money eventually paid back will be worth less in purchasing power terms. The same factor affects those short-term assets and liabilities that are fixed in money terms. If there is inflation, a 'gain' will be made on holding overdrafts and creditors, and a 'loss' will result from holding debtors and cash. Deciding upon the correct treatment of these long-term and short-term monetary items has given rise to the most controversy of the three problems discussed here.

It is widely argued that, if profit is used to measure the economic performance of a company, historical cost profit is greatly overstated because of the lack of depreciation and cost of sales adjustments; and unless this net overstatement of profit is recognized, the usefulness of accounting data for decision making will be seriously impaired. For example, decisions about what dividends to pay or what pay rises can be afforded may be seriously in error. Even if a company understands the problem, shareholders and employees may not, and they may press for dividend and wage payments based on historical cost results.

There is a similar problem with tax on the profits of businesses. As taxation is levied on taxable profit, which, in times of inflation and rising prices, is based on

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overstated historical cost accounting profit, the effective rate of tax on a more realistic measure of profit will surely be high. However, as shown in chapter 12, there are substantial adjustments involved in the calculation of taxable profit in some countries.

Other problems – perhaps even more serious – concern the effects on the decision making of management. In decisions about prices, types of production, the assessment of the performance of managers, and so on, accounting information will be used. Correct decisions require relevant information, which includes adjustments for the effects of inflation and changing prices – although the dangers of an excessive sacrifice of reliability must be considered too.

16.3 European disagreement

Although the problems outlined in the last section are clear, there has been opposition from some countries to any adjustments to financial reporting that is designed to correct for price changes. The most obvious opposition to departures from historical cost has come from Germany, which suffered more than any other European country from hyperinflation during the 1920s. The German view has been that accounting should not be adjusted away from reliable cost-based numbers. The purpose of accounting is connected to the distribution of profits, the protection of creditors and the calculation of taxes. These, it is claimed, will all be jeopardized by such tinkering. There was German opposition to inclusion in the EU Fourth Directive of optional departures from historical cost. These options were examined in chapter 8. They have not been permitted under German national accounting regulations.

In many other European countries, either the accountancy profession or the government has made moves to adjust accounting for inflation, and most countries have taken some of the optional provisions in the EU Fourth Directive to enable revaluations (as discussed in chapter 8). Full systems of inflation accounting have only been seriously proposed in Europe in countries where the government takes a hands-off approach to accounting and where tax numbers can be disconnected from accounting numbers. This is because price adjustment can be so complex and can have such large effects on accounting that full-scale, continuous use of it seems inappropriate as a legal requirement for all companies. Consequently, it is at present only in countries such as the United Kingdom and the Netherlands that the systems discussed in the next section have been tried.

The IASB introduced a standard in this area, IAS 15, but this was for long optional and of little practical significance, and has now been withdrawn. A separate standard, IAS 29, deals with 'hyperinflationary' economies and requires adjustments for general inflation, as defined and discussed below, in such circumstances.

16.4 General or specific adjustment

The major divide between different systems of accounting for price changes is that existing between those systems that adjust primarily for the changes in prices of the specific assets owned by the business and those that adjust for a

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general price movement, namely inflation. The specific adjustments could be made by taking account of replacement costs, as examined in the previous section. By contrast, a system for general adjustment could be called *current purchasing power (CPP) accounting*. Those current value systems that do not include an adjustment for general price changes have been said by some not to be systems of *inflation* accounting at all because they do not take account of the falling value of money. The type of adjustments for depreciation and cost of sales depends upon which system is being used.

The underlying difference between the two systems concerns the concept of *capital maintenance*. In chapter 2 of this book it has been mentioned that one way of measuring profit for a year is to compare the net worth of a business at the beginning of the year with that at its end. Any increase will be the profit, assuming that no capital has been introduced or withdrawn. That is, profit is any excess left over after maintaining the capital of the business.

When there are specific and general price changes, the concept of capital maintenance involves several possible results. Consider a simple business that buys land for €10,000 with cash introduced by the owner. It may be represented as in Figure 16.5. After several years the business sells the land for €15,000. In the meantime the general price index has risen from 100 to 130, and the specific land index has risen from 100 to 145. The business intends to buy a very similar replacement for €14,000 in a more convenient location. What profit does the business make on the sale of the land? The answer depends upon which concept of capital maintenance is being used.

Figure 16.5 Cash of €10,000 introduced and used to buy land

Balance sheet			
Land	10,000	Capital	10,000
	10,000		10,000

The *historical cost (HC)* concept is that the original nominal money capital should be maintained.

Activity 16.D Prepare the balance sheet of the business shown in Figure 16.5 after the sale of the land, under the HC concept.

Feedback Immediately after the original land has been sold, the balance sheet will appear as shown in Figure 16.6, showing a profit of €5,000, which is the current sales revenue *less* the original historical cost.

Figure 16.6 Balance sheet after sale of the land based on historical cost

HC balance sheet			
		Capital	10,000
Cash	15,000	Profit	5,000
	15,000		15,000

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An alternative concept is that the business should maintain the general purchasing power of the original capital and treat any excess over this as profit.

Activity 16.E

Prepare the balance sheet of the business after the sale, on a general purchasing power maintenance (CPP) basis, that is by adjusting for the change in purchasing power of the monetary unit, as measured by the movements in the general price index.

Feedback In this case, to maintain the real value of the capital to the owners will require €13,000 (i.e. €10,000 × 130/100). This will lead to a profit of €2,000, as shown in the restated balance sheet in Figure 16.7.

Figure 16.7 Taking the general price index into account

CPP balance sheet			
		Original capital	10,000
		Purchasing power adjustment	3,000
		CPP capital	13,000
Cash	15,000	Profit	2,000
	15,000		15,000

A further possibility is to hold that the business only makes profit after it has maintained its physical capital intact. This is a *current value (CV)* concept. It need not mean that the exact original assets are maintained, but it does mean that there is the same productive potential.

Activity 16.F

Prepare the balance sheet of the business after the sale, on a physical capital maintenance basis, in other words by adjusting for cost movements as indicated by a specific property index.

Feedback Since the capital figure in this case represents a single piece of land, it can be said that to maintain the physical capital will require a figure of €14,500 (i.e. €10,000 × 145/100). This will lead to a profit of €500, as shown in Figure 16.8. The 'specific adjustment' to capital may be called a *capital maintenance reserve*.

Figure 16.8 Profit after physical capital is maintained

CV balance sheet			
		Original capital	10,000
		Specific adjustment	4,500
		Current value capital	14,500
Cash	15,000	Profit	500
	15,000		15,000

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However, it should be noted that the specific land price index is only used as a proxy for more detailed information about the actual replacement cost (RC) of the business's asset. In this case the business has decided that it can maintain its productive potential by buying a replacement costing €14,000. When this transaction is completed, it is very clear that the physical capital has been maintained and that the profit on a current value basis should be regarded as €1,000. An alternative way of looking at this is that current 'expense' (replacement cost) has been compared to current sales revenue, as set out in Figure 16.9.

Figure 16.9 Actual current value

CV balance sheet			
Property	14,000	Original capital	10,000
		Specific adjustment	4,000
		Current value capital	14,000
Cash	1,000	Profit	1,000
	15,000		15,000

These various possibilities are summarized in Table 16.1. There are arguments in favour of each of them. The historical cost concept is simple to use and avoids the need for subjective estimates. Also, for the purposes of strict accountability, there is an advantage in the sense that the accounting system deals only with actual amounts of money received or spent. This makes it reliable and easily verifiable.

Table 16.1 Capital maintenance concepts: variation of results

Concept	*Capital to be maintained*	*Profit*
Historical cost	Historical cost capital	5,000
Current purchasing power	Capital adjusted by general index	2,000
Current value (approx.)	Capital adjusted by specific index	500
Current value (actual)	Capital adjusted by specific RC	1,000

From the point of view of the owners it may be suggested that the effect of inflation on the spending power of their capital is more relevant than the specific price changes of the business's assets. This is because the shareholders wish to spend their returns on retail purchases and, arguably, the best indication of changes in their capacity to do this is given by the general inflation index. Under this assumption, a current purchasing power system would be preferred. However, it is more usual in accounting to use the *entity convention*, whereby the business is viewed as being quite separate from the shareholders. It is also a fundamental accounting concept that the business is usually assumed to be a going concern; it therefore does not intend to return to the owners the assets that represent the capital. Normally (as in this case), the business will intend to replace the original item with another of similar economically productive potential. Since the assets are not to be returned to the owners but to be replaced by assets

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performing a similar function, their specific current value is surely of greater relevance than their general purchasing power.

If this argument is followed, it will lead to the adoption of a current value approach. The use of the actual replacement cost is clearly more relevant than a specific index. However, obtaining the former information before the asset is sold may often be too difficult or too expensive to be practical. Furthermore, critics of current value systems have pointed out that, although there are obvious advantages of such systems irrespective of any general movement in prices, they do not take account of *inflation* as previously defined in terms of a general decline in the purchasing power of money. In order to meet this criticism it is possible to combine adjustments for both general and specific price changes. The original capital of the owners can be adjusted for inflation by using a general index. However, the need for the going concern to take account of specific price changes can also be recognized. This is done by ensuring that any part of current purchasing power 'profit' that relates to the specific increase in the value of assets is treated as an undistributable holding gain.

Activity 16.G Taking Figure 16.9 as the starting point, prepare a balance sheet taking account of general inflation as well as a need for physical capital maintenance – that is, by separating the effects of specific and general index changes.

Feedback The balance sheet will be as shown in Figure 16.10.

Figure 16.10 Treating the 'profit' on property as an undistributable gain

Balance sheet

Property	14,000	Original capital	10,000
		Purchasing power adjustment	3,000
Cash	1,000	CPP capital	13,000
		Undistributable reserve	1,000
			14,000
		Distributable profit	1,000
	15,000		15,000

Such a system may be considered to be too complex for many users of financial statements. However, it has the obvious advantage of adjusting the assets for specific price changes and the capital for changes in purchasing power.

Once an approach to capital maintenance has been chosen, the detailed problems of adjusting the accounting system for price changes can be looked at. In practice, balance sheets and income statements are required yearly without the above simplifying assumption that the property has been sold. Thus, the assets as well as the capital must be adjusted for specific or general price changes. The adjustments to profit follow from this. For example, the type of adjustment for depreciation will depend upon whether a fixed asset is restated using a general or a specific index. If a current value approach is adopted, a fixed asset will be

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restated using a specific index, and depreciation for a year will be based on this restated amount. This is discussed in the next sections, where actual proposals for systems of accounting to replace or supplement historical cost are examined.

16.5 General price-level adjusted systems

General price-level adjusted (GPLA) accounting systems were being discussed as long ago as the 1920s and 1930s, particularly in Germany, the Netherlands and the United States. In the early 1970s, when interest in inflation accounting was very strong because of the high levels of inflation mentioned earlier, many accountancy bodies in the English-speaking world investigated such systems. In 1974 a provisional Standard (PSSAP 7) on the topic was issued by the UK accountancy bodies. In the United Kingdom, it was called current purchasing power (CPP) accounting, but it did not become standard practice because of the intervention of the government-sponsored Sandilands Committee in favour of current cost accounting (see section 16.7). However, about 150 UK companies produced supplementary CPP information in their annual accounts. Now the place to look for more consistent and general use of GPLA systems is South America.

GPLA systems are based on historical cost accounts adjusted with general price index numbers. The basic task is to translate money of different periods into current money of uniform purchasing power. Current items in the balance sheet are already in end-of-year money, but fixed assets need to be analyzed by age and adjusted accordingly, using the general price index.

The income statement adjustments are the three discussed earlier: depreciation, cost of sales and monetary items. In each case the general price index is used, so that all figures are adjusted for *inflation* rather than for specific price changes.

Work through the following illustration carefully.

16.5.1 A worked illustration

Mushroom Co. was established on 1 January 20X4. Its opening balance sheet (on this date) was as given in Table 16.2.

Table 16.2 Mushroom's opening balance sheet at 1.1.X4

	€
Land	6,000
Equipment	4,000
Inventory	2,000
Equity	12,000

During 20X4, the following applies to Mushroom:

(a) it purchased extra inventory of €10,000;
(b) it sold inventory for €11,000 cash, which had an historical cost of €9,000;
(c) its closing inventory on 31 December 20X4 had an historical cost of €3,000 and was bought when the general price index averaged 115 (1.1.X4 = 100);

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(d) the equipment it owns has an expected life of four years, and nil residual value; the straight-line method of depreciation is used;
(e) the general price index stood at:
- 100 on 1 January 20X4;
- 110 on 30 June 20X4;
- 120 on 31 December 20X4.

It can be assumed that purchases and receipts occur evenly throughout the year. There are no debtors or creditors.

Required: to calculate the CPP profit for 20X4 and prepare the CPP balance sheet as at 31 December 20X4. The solution is set out next.

Solution

The CPP income statement is as shown in Figure 16.11 for the year.

Figure 16.11 CPP income statement for Mushroom for 20X4

		€(CPP)	€(CPP)
Sales	(11,000 × 120/110)		12,000
Opening inventory	(2,000 × 120/100)	2,400	
add purchases	(10,000 × 120/110)	10,909	
		13,309	
less closing inventory	(3,000 × 120/115)	3,130	
			10,179
			1,821
less depreciation			1,200
			621
Loss on holding monetary assets (cash)[a]			91
CPP profit			530

[a] If cash accrues evenly over the year, the loss is €(1,000 × 120/110) – €1,000 = €91.

The CPP balance sheet for Mushroom as at 31 December 2004 is as set out in Figure 16.12.

Figure 16.12 CPP balance sheet for Mushroom at 31.12.X4

		€(CPP)	€(CPP)
Land	(6,000 × 120/100)		7,200
Equipment	(4,000 × 120/100)	4,800	
less depreciation	(1,000 × 120/100)	1,200	
			3,600
Inventory	(3,000 × 120/115)	3,130	
Cash	(11,000 – 10,000)	1,000	
			4,130
			14,930
Equity	12,000 × 120/100		14,400
CPP profit			530
			14,930

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It is important to think carefully when comparing the position at 31 December 20X4, as reported under CPP, with the position 12 months earlier. The opening balance sheet was expressed in euros of 1 January spending power and the closing balance sheet is now expressed in euros of 31 December spending power. These different measuring units are not comparable and the original balance sheet will need to be re-expressed in 31 December 20X4 euros before a rational comparison can be drawn with the closing position.

Activity 16.H Prepare, side by side, summary balance sheets for Mushroom Co. for 1 January 20X4 and 31 December 20X4, both expressed in 31 December purchasing power units.

Feedback The result is shown in Figure 16.13.

Figure 16.13 CPP balance sheets for Mushroom with adjusted opening comparatives

1 January 20X4		*Item*	*31 December 20X4*	
6,000 × 120/100	7,200	Land		7,200
4,000 × 120/100	4,800	Equipment	4,800	
	–	*less* depreciation	1,200	
				3,600
	12,000			10,800
2,000 × 120/100	2,400	Inventory	3,130	
	–	Cash	1,000	
				4,130
	14,400			14,930
12,000 × 120/100	14,400	Equity		14,930

The work involved in producing GPLA accounts is relatively straightforward. There are fewer difficulties than those involved with the specific adjustments of CV systems, and GPLA accounts remain fairly objective. However, the major reason for the failure of GPLA accounting to be adopted in the English-speaking world is the serious doubt about whether the information that it provides is particularly relevant. Criticisms have been made about the difficulty – simply but amply illustrated in the Mushroom Co. example – of comprehending accounts not produced in 'physical money' terms but in constantly changing units, about the lack of relevance of adjusting fixed assets, depreciation and inventory by a general index, and about the inclusion of monetary gains in published profit figures.

16.6 Current value accounting

The current value of an asset can be considered to be based on one of the three concepts briefly introduced in chapter 8: *economic value* (EV), *net realizable value* (NRV)

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and *current replacement cost* (CRC). It would be possible to establish complete accounting systems based on each of these concepts or, alternatively, to combine them – as, for example, in systems based on deprival value (see section 16.7).

16.6.1 Economic value

A current value accounting system based on economic values would have a strong theoretical basis, because the theoretical value of an asset depends upon the discounted future net flows of money from it. However, there are serious practical problems in estimating such future flows and establishing suitable discount rates. Also, the attendant subjectivity would make an auditor's job very difficult and reduce the reliability of accounting information. In addition, if the individual assets and liabilities of a business were all to be separately valued using an economic value basis, there would be the theoretical problem that, because cash flows result from assets working in combination, the estimation of the flows resulting from one asset alone is perhaps not a sensible task.

For these reasons no country has seriously considered proposing a system of accounting based mainly on economic values. Nevertheless, EV has been included as a basis to be used in exceptional circumstances within systems such as current cost accounting. It is also the value used for calculations of the impairment of assets (see chapter 9).

16.6.2 Net realizable value

Another possibility is to have a current value system based on net realizable values. An example of such a system is 'continuously contemporary accounting' (CoCoA), proposed by the Australian academic, R. J. Chambers. Under such a system, assets are adjusted to NRV, and depreciation is measured as the fall in the NRV of a fixed asset over an accounting period.

This approach may well provide useful information for management when making decisions about the future of assets, for creditors and for banks. However, it is fairly complex and difficult to use. For example, it is not possible to rely on the use of index numbers in the calculation of second-hand values of many fixed assets or partially completed stocks; thus, individual values must be calculated. Also, major criticisms have been levelled at the subjectivity involved and the fact that most businesses have no intention of selling most of their fixed assets in the near future, which casts doubt on the relevance of NRVs. However, as an exceptional basis, NRV is included in the proposals for current cost accounting examined in the next section. Also, as examined in chapters 9, 10 and 11, NRV is used as a safety net in the valuation of inventories and in impairment tests. For certain assets, particularly investments, IASB and other standard setters have moved towards the use of 'fair value' (a current market value that specifies neither buying nor selling), discussed briefly in 16.9 below.

16.6.3 Current replacement cost

A third basis for a current value system is current replacement cost. This has already been considered at some length as regards inventory. The values of fixed

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assets are their depreciated CRCs. The gross CRC may be determined by valuers, by suppliers' catalogues or by age analysis of fixed assets followed by the application of specific indices. Suppose that a company buys a machine for €10,000 on 1 January 20X0. The machine is expected to have a useful life of five years and no scrap value. It is to be depreciated at 20 per cent per year on a straight-line basis. After three years, on 31 December 20X2, a CRC balance sheet is drawn up. The specific index has risen over the three years from 100 to 140. Therefore the gross CRC, in the absence of more exact information, will be €14,000 (i.e. €10,000 × 140/100). The net CRC will be €5,600 (i.e. €14,000 less 60 per cent cumulative depreciation of €8,400). The value of inventory will also be based on CRC, although this may be difficult to determine in the case of partially worked or finished goods.

One of the problems with the CRC of any asset is the difficulty that there may be in finding the cost of an effective replacement. This is particularly obvious in the case of obsolete fixed assets. It is necessary to establish the concept of the 'modern equivalent asset', the current cost of which is adjusted for any improvements that it embodies compared with the asset that it replaces. When the CRCs have been established, the excesses over historical costs are reflected in an asset revaluation reserve.

As far as the income statement is concerned, there are two important adjustments. Depreciation is based on the current cost of fixed assets. It is generally proposed for simplicity that the end-of-year, rather than the average-for-the-year, CRC of a fixed asset should be used. The second adjustment would be to eliminate the stockholding gains from profit by increasing the value of inventory used by a cost-of-sales adjustment. This would be done by using a company's detailed records or a set of specific indices. It is generally thought that these holding gains should not be regarded as distributable because they are part of maintaining the operating capability. An adjustment for gains and losses on monetary items is not usually included in CRC systems, which concentrate on specific price changes of physical resources.

16.6.4 A worked illustration

Let us assume, for illustrative purposes, that C Co'.s balance sheet on 31 December, year 1, after one year's trading, is as set out in Figure 16.14.

Figure 16.14 Balance sheet for C at 31 December, year 1

		€		€
Land and buildings at cost		110,000	Capital – €1	200,000
Plant and equipment at cost	40,000		Ordinary shares	
less Depreciation	4,000	36,000	Profit	26,000
		146,000		226,000
Inventory	90,000		Creditors	50,000
Debtors	90,000		Loan	50,000
		180,000		
		326,000		326,000

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Further parameters to the illustration are as follows:

(a) The capital and loan had been contributed in cash and the land and buildings, plant and equipment and opening inventory of €60,000 had been purchased on 1 January.
(b) Transactions took place evenly during the year. The situation may therefore be treated as if all opening balances were held from 1 January until 30 June, as if all transactions took place on 30 June, and as if all closing balances were held from 30 June until 31 December.
(c) Price indices were as follows:

	Plant	*Inventory*
1 January	100	100
30 June	105	115
31 December	110	130

(d) The land and buildings were professionally valued at 31 December of year 1 at €135,000.

Required: to prepare a closing balance sheet on CRC lines. The solution to the problem is set out next.

Solution

The income statement and balance sheet for C for its first year of trading are as shown in Figure 16.15.

Figure 16.15 Income statement and balance sheet for C for year 1's trading

Income statement		€	€
HC profit			26,000
Less Adjustments:			
Depreciation	$\left(4{,}000 \times \frac{(110-100)}{100}\right)$	400	
Inventory	$\left(60{,}000 \times \frac{(115-100)}{100}\right)$	9,000	9,400
Current operating profit			16,600
Holding gains:			
Inventory: realized as above		9,000	
unrealized	$\left(90{,}000 \times \left(\frac{(130-115)}{115}\right)\right)$	11,740	
Plant and equipment: realized as above		400	
unrealized	$\left(40{,}000 \times \left(\frac{(110-100)}{100} - 400\right)\right)$	3,600	
Land and buildings: unrealized	(135,000 – 110,000)	25,000	
Total holding gains			49,740

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Figure 16.15 *continued*

Balance sheet		€	€
Fixed assets:			
Land and buildings			135,000
Plant and equipment	$\left(40{,}000 \times \frac{110}{100}\right)$	44,000	
less depreciation	$\left(40{,}000 \times \frac{110}{100}\right)$	4,400	39,600
Current assets:			174,600
Inventory	$\left(90{,}000 \times \frac{130}{115}\right)$	101,740	
Debtors		90,000	191,740
			366,340
Share capital			200,000
Holding gain reserve			49,740
Profit			16,600
			266,340
Loan			50,000
Creditors			50,000
			366,340

Concluding comment on CRC

The Netherlands has been the leader in replacement cost theory and practice. In the early twentieth century, a leading Dutch accounting academic and practitioner, Th. Limperg, developed an extensive theory, based in micro-economics, that was influential in the teaching of accounting. Many companies, notably including Philips, used replacement cost accounting (or elements of it) at various times since the 1950s. Nevertheless, there have been no direct requirements for departures from historical cost, and this minority practice has further declined in recent years. The revaluation of property, plant and equipment allowed under IAS 16 is based on a sort of replacement cost concept. This is clear because gains are not taken to income, but depreciation expenses and gains on disposal are subsequently adjusted to be based on the new 'cost'.

16.7 Mixed values – deprival value

Assume that a business owns an asset. What is that asset 'worth' to the business? The deprival value (DV) approach says that the DV of an asset is the loss that the rational businessperson would suffer if he or she were deprived of the asset. This loss will depend on what would rationally have been done with the asset if the businessperson had not lost (been deprived of) it.

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Activity 16.I A businesswoman is in possession of six assets, labelled A to F respectively. The various monetary evaluations (in €) of each asset by its owner are shown in Table 16.3.

Table 16.3 Assets owned and valued under different bases

Asset	*HC*	*CRC*	*NRV*	*EV*
A	1	2	3	4
B	5	6	8	7
C	9	12	10	11
D	16	15	14	13
E	17	19	20	18
F	23	22	21	24

The owner has signed a contract with an insurance agent under which she would be reimbursed, in the event of loss of any asset, by 'the amount of money a rationally acting person would actually have lost as a result of losing the asset'. Put yourself in the position of the rationally acting person, decide what action you would take in each circumstance, if you lost the asset, and then calculate the net effect on the monetary position.

Feedback In each situation the first question to ask is: 'Would the rationally acting businesswoman replace the asset or not?' She would replace it if the proceeds of either selling it (NRV) or using it (EV) are higher than the costs of replacing it. If it would be replaced, then the loss suffered is clearly the cost of replacement. Thus, in situations where a rationally acting person would replace the asset, the deprival value is CRC. If the businesswoman would not replace it, then the loss suffered is given by the value of the benefits that would have been derived from the asset but that she will now never receive. Being rational, the intention must be to act so as to derive the highest possible return, i.e. the higher of NRV and EV. Therefore, in situations where the rationally acting businesswoman would not replace the asset if deprived of it, the deprival value is the higher of NRV and EV. This last element, the higher of NRV and EV, is known as the *recoverable amount*, and we have met it before in the context of impairment tests in chapter 9.

So we can formally state that deprival value is the lower of CRC and recoverable amount, where recoverable amount is the higher of NRV and EV (see Figure 16.16).

Given three different concepts (CRC, NRV and EV), there are only six possible different rankings:

EV	>	NRV	>	CRC
NRV	>	EV	>	CRC
CRC	>	EV	>	NRV
CRC	>	NRV	>	EV
NRV	>	CRC	>	EV
EV	>	CRC	>	NRV

Our example contains all six of these alternatives. The DV in each situation is as shown in Table 16.4. Notice the irrelevance of the HC figures.

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Figure 16.16 Relationship between DV, CRC, NRV and EV

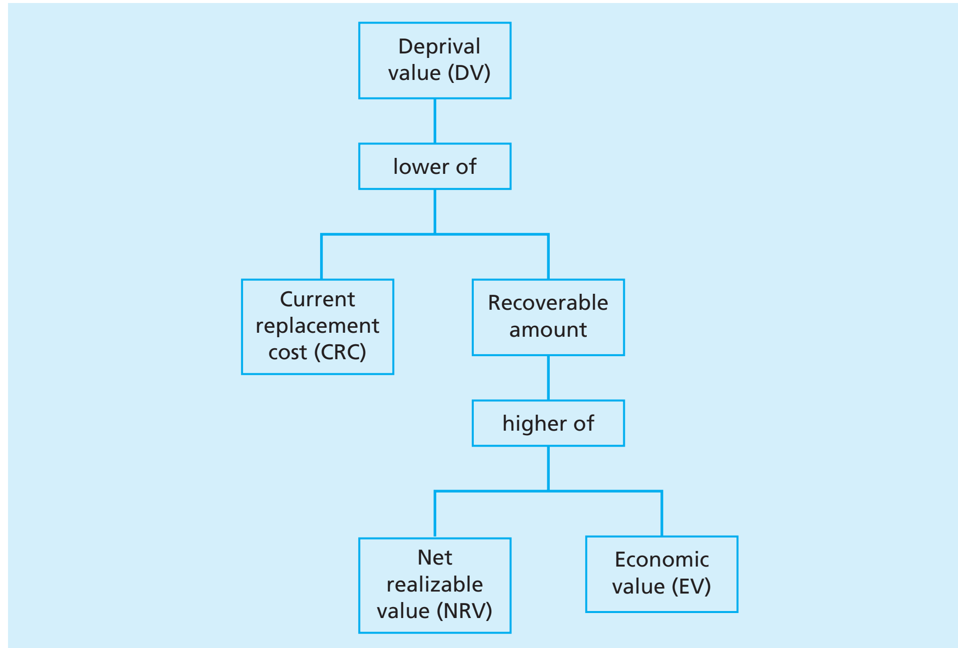

Table 16.4 Deprival values for six assets

Asset	*Deprival value*	*Reason*
A	2	Cost of replacement
B	6	Cost of replacement
C	11	EV not to be received
D	14	NRV not to be received
E	19	Cost of replacement
F	22	Cost of replacement

Because the deprival value arguably takes account of the intentions – or at least the logical actions – of the business concerned, it is often termed the *value to the business* of an asset.

What about capital maintenance? Profit is here being regarded as the excess after maintaining the value to the business of its assets. The value to the business is clearly seen to be related to actual operations (i.e. what the business would do). Following from this, we can say that the deprival value basis seeks to maintain the business's capacity to do things, usually expressed as the *operating capacity* or *operating capability*. We saw above that in four of the six possible rankings, deprival value equals RC. In the practical business situation, the chances of replacement cost being higher than both NRV and EV will generally be relatively small, and so the other two rankings will in practice not occur frequently. This means that in a

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practical business context, deprival value will equal RC much more frequently than four cases out of six.

The logic of deprival value seems intuitively attractive. It formed the basis of a practical attempt in preparing financial statements taking account of specific price changes in the UK in the early 1980s (called current cost accounting). However, the complexity is clearly considerable, both in terms of some loss of objectivity in the preparation and, perhaps more importantly, in terms of comprehension by the non-specialist reader of the resulting statements.

Since the early 1990s, practical interest in such methods has fallen in most countries, as inflation rates have generally been low. However this is not necessarily logical. It must be remembered that replacement cost, deprival value, and so on are concerned with the price changes of *specific* goods or commodities. If the price of a major raw material doubles or halves – as has happened in recent years with crude oil, or coffee, for example – the effects on relevant businesses, which will be unreported under historical cost accounting, might well be enormous.

16.8 Partial adjustments

There have been a number of attempts to make relatively simple adjustments to historical cost accounting. This section will examine three of them.

16.8.1 *Ad hoc* government-controlled revaluations

In France, Spain, Italy and Greece revaluations of fixed assets and inventories have occurred several times in the last few decades. Some examples are briefly noted here.

1. *France*. A revaluation of fixed assets and inventories was required, for companies with traded securities, in balance sheets at 31 December 1978. This used specific indices as published by the government for 31 December 1976 prices. The revaluation was tax-exempt, and subsequent depreciation charges were adjusted back to historical cost in order to avoid changing the tax calculations.
2. *Spain*. A revaluation was carried out in 1983. This was tax-exempt but had a subsequent beneficial tax effect in that it increased depreciation charges for the calculation of taxable income. Thus it aided the liquidity of Spanish companies in an inflationary period. In 1996 a further taxable revaluation was required.
3. *Italy*. Revaluations were required for certain companies in 1983, 1991 and other years. These had some tax effects.

16.8.2 *Ad hoc* revaluations by business management

In certain countries (such as the United Kingdom, Denmark and the Netherlands) some fixed assets have been revalued, largely at the discretion of the directors of companies. A few Dutch companies have used full systems of current value accounting, but generally revaluation in these countries involves only some companies, a selection of assets (particularly land and buildings), and is not necessarily performed annually. In the United Kingdom, from 1999, if assets are

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revalued they must be valued every year. These revaluations are mostly a rather messy partial attempt to update accounts for price changes.

16.8.3 LIFO inventory valuation

The last-in, first-out (LIFO) method of inventory valuation has been discussed in chapter 10. It is a method that matches the most recent purchases against current sales and thus charges an approximately current cost for inventory used. A disadvantage is that the oldest purchases are deemed to remain in inventory, which leads to an unrealistically low balance sheet figure. Also, if inventory levels are reduced, some very old costs will enter the cost-of-sales calculation.

Nevertheless, the use of LIFO does approximately adjust the cost-of-sales figure for specific price changes, particularly if purchases are frequent. Thus, it reduces profit figures during inflationary periods. It is now used by many corporations in Germany and Italy and in the United States, mainly because it reduces profit for tax purposes. In most European countries it is not allowed for tax purposes, and it is prohibited by law or by accounting standard. At the time of writing it is still permitted, as an 'allowed alternative', under IAS but this option is in the process of being withdrawn, as discussed in chapter 10.

16.9 Fair values

A significant recent trend is the increasing importance of the concept of *fair value*. This is defined by the IASB as 'the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction' – in effect, the market price in a theoretically perfect market. It is important to notice that fair value is not identical to net realizable value. Net realizable value is the expected sales proceeds reduced by any future transaction costs of the selling process. Fair value is the expected gross exchange value, without any reduction for transaction costs.

Fair value is referred to in a number of IASs, notably IAS 39 on financial instruments (see chapter 11) and IAS 40 on investment properties (see chapter 9). The importance of fair value seems likely to increase further on the international scene over the next few years, although this may well create tension and disagreement.

It is arguable that the use of fair value is likely in many situations to increase relevance for many users, though not necessarily for all. It is also arguable, however, that the use of fair value will reduce reliability as compared with historical costs. As discussed in section 16.3, and more generally in chapter 5, different country traditions will lead to difference reactions to such a proposed change.

The European Accounting Directives have recently been amended to permit the usage of fair values, and there are strong signs that the IASB wishes to increase the usage of this valuation basis over the next few years. Such proposals will meet serious opposition, and the IASB has not yet fully established either the full theoretical implications, or the practical operationalisation, of the fair value concept. Follow the debate.

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SUMMARY

- Inflation ran at a very high level in much of Europe in the mid-1970s, thus encouraging attempts to adjust historical cost accounting for general or specific price changes. Indices for both are available in many countries.
- The effects of price changes cause deficiencies in historical cost balance sheets and profit calculations. The effects on profit are more complex and may involve adjustments for depreciation, for cost of sales and for gains and losses on monetary items.
- Unless adjustments are made, users of accounts may be seriously misled about the value and profitability of a business and about what may be suitable levels of dividends, wages or prices. However, some countries oppose any departure from historical cost.
- Adjusted systems of accounting fall into two groups: those that adjust for general price changes and those that adjust for specific price changes. The underlying difference concerns the concept of capital maintenance. General adjustment aims to maintain the inflation-adjusted value of the owners' capital; specific adjustment aims to maintain the productive capacity of the business.
- The choice determines how assets are to be restated and, in each case, profit is what remains after the appropriate measure of capital has been maintained. It is possible to combine the two approaches, so that both inflation and specific price changes are taken into account.
- Current value systems could be based purely on economic values, on net realizable values or on current replacement costs. Deprival value is a system that uses all three bases, although mainly current replacement cost.
- In the absence of a standard method of adjusting accounts for changing prices, a number of partial adjustments were experimented with in Europe. These include government-controlled or *ad hoc* revaluations and the use of LIFO for calculating the cost of sales.
- Fair value is likely to become an increasingly important concept internationally.

References and research

The relevant IASB standards are

- IAS 15, *Information Reflecting the Effects of Changing Prices*, recently withdrawn.
- IAS 29, *Financial Reporting in Hyperinflationary Economies*.

There is a vast theoretical literature on the topics covered in this chapter. An excellent bibliography appears in:

- T. Lee, *Income and Value Measurement*, 3rd edition (New York: Van Nostrand Reinhold, 1985).

A paper of some practical interest is:

- H. Brink, 'A history of Philips' accounting policies on the basis of its annual reports', *European Accounting Review*, Vol. 1, No. 2, 1992.

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See also, for itself and for the references therein:

- D. Tweedie and G. Whittington, 'The end of the current cost revolution', in T. Cooke and C. Nobes (eds), *The Development of Accounting in an International Context*, (London: Routledge, 1997).

Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

16.1 Which of the following terms or phrases is most closely associated with current value accounting?

(a) Specific price changes.
(b) General price changes.
(c) Inflation.
(d) A change in the purchasing power of the currency.

16.2 Current purchasing power accounting is most closely associated with:

(a) Specific price changes.
(b) General price changes.
(c) Changes in replacement cost.
(d) Changes in net realizable value.

16.3 An asset purchased for €1,000 in 1980, when the consumer price index was 116 (1977 = 100) would be restated to what amount today in constant currency terms, assuming today's consumer price index is 200?

(a) €1,000.
(b) €1,160.
(c) €1,724.
(d) €2,000.

16.4 During a period of inflation, a company whose monetary liabilities exceed its monetary assets has:

(a) A net loss in purchasing power.
(b) A net gain in purchasing power.
(c) Either a net gain or a net loss in purchasing power.
(d) Neither a net gain nor a net loss in purchasing power.

16.5 Historical cost balance sheets produce confusing totals, because the figures are all related to different dates. This problem is removed by the use of current purchasing-power adjustments, which leads to totals giving a consistent and meaningful valuation.

(a) True.
(b) False.

16.6 Under a current replacement cost system that seeks to maintain the operating capability of an enterprise, unrealized holding gains on fixed assets should be seen as not distributable but realized holding gains generally should be treated as distributable.

(a) True.
(b) False.

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16.7 Deprival value accounting can never lead to larger balance sheet numbers for assets than replacement cost accounting.

(a) True.
(b) False.

16.8 Adherence to the matching principle means that the historical cost basis must be used in financial statements.

(a) True.
(b) False.

Exercises

Feedback on the first two of these exercises is given in Appendix E.

16.1 P is a computer dealer. From the information in Table 16.5:

(a) compute the income statements and closing balance sheets for each of the years 20X0 and 20X1 under historical cost principles, assuming FIFO;
(b) construct the income statements and closing balance sheets for each of the years 20X0 and 20X1 under current replacement cost principles;
(c) comment briefly on the significance of a comparison of the results.

Table 16.5 Transactions by P

		'Wealth'	
Date	*Event relating to trading in computers*	*Computers*	*Cash balance (€)*
1/1/X0	Set up business with €10,000 in the bank		10,000
2/1/X0	Buy six computers for €1,000 each	6	4,000
1/5/X0	Sell two computers for €1,500 each (replacement cost = €1,100)	4	7,000
1/9/X0	Buy two computers for €1,200 each	6	4,600
1/10/X0	Pay annual rent of €600	6	4,000
31/12/X0	Financial year end. Pay tax of €200	6	3,800
3/3/X1	Sell two computers for €1,800 each (replacement cost = €1,300 each)	4	7,400
1/10/X1	Pay annual rent of €700	4	6,700
1/11/X1	Buy two computers for €1,400 each	6	3,900
31/12/X1	Financial year end. Pay tax of €450	6	3,450

16.2 Duck Co. was formed on 1 January 20X0 with 10,000 issued €1 ordinary shares. The same day it obtained a 12 per cent loan of €8,000 and bought fixed assets for €9,000. During 20X0, the purchases and sales of widgets were as given in Table 16.6.
You are also told that:

(a) purchases and sales were all paid for in cash;
(b) the loan interest was paid early in 20X1;
(c) the buying price of widgets changed on 1 March, 1 June, 1 September and 1 December (when it was 100);
(d) the fixed assets are to be depreciated at 10 per cent per annum, and at 31 December 20X0 their replacement price was €12,600;
(e) general expenses during the year were €13,200.

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Table 16.6 Duck Co.'s widget transactions in 20X0

	Purchases	€	*Sales*	€
3 January	100 at €80	8,000		
1 February			60 at €120	7,200
1 April	110 at €75	8,250		
1 May			90 at €120	10,800
1 July	100 at €85	8,500		
1 August			130 at €120	15,600
1 October	120 at €90	10,800		
1 November			110 at €130	14,300

Prepare a balance sheet as at 31 December 20X0, together with an income statement for the year to 31 December 20X0, on replacement cost lines. What are holding gains? In what circumstances are they distributable?

16.3 From the historical cost accounts of Q Co., set out in Figure 16.17, prepare a set of CPP accounts for the year ended 31 December 20X8.
The movement on the retail price index can be taken as follows:

1 January 20X5	180
1 January 20X7	200
Average for 20X7	210
31 October 20X7	215
31 December 20X7	220
Average for 20X8	230
31 October 20X8	235
31 December 20X8	240

Assume all sales, purchases and expenses accrue evenly throughout the year.

16.4 Explain and demonstrate how replacement cost accounting affects reported profit compared with historical cost.

16.5 Is replacement cost more or less prudent than historical cost?

16.6 'Businesses should be required to publish their income statement on replacement cost lines and their balance sheet on net realizable value lines.' Discuss.

16.7 What do CPP adjustments do, and how do they do it?

16.8 Are general indices more or less useful in financial reporting than specific price changes?

16.9 Explain the meaning of capital maintenance.

16.10 Explain the meaning of deprival value. Is it an improvement on pure replacement cost accounting?

16.11 Ale Properties is a small family-owned company that only has equity share capital; it has no debt capital. Its net assets at 1 January 20X4 were €1,000, and on the 31 December 20X4 the net assets were €1,400. There have been no issues or withdrawals of share capital during the year. The general rate of inflation, as measured by the Retail Prices Index, is 10 per cent, whereas the specific rate of inflation for the type of goods sold by the company is 15 per cent.

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Figure 16.17 HC accounts for Q for 20X8

Balance sheet		31.12.X7 €000		31.12.X8 €000
Fixed assets:				
Cost (purchased 1.1.X5)		500		500
less depreciation		300		400
		200		100
Current assets:				
Inventory (purchased 31 October)	100		150	
Debtors	200		300	
Bank	150		350	
	450		800	
less Current liabilities				
Creditors	300		400	
		150		400
		350		500
Share capital		100		100
Reserves		250		400
		350		500

Income statement for the year ended 31 December 20X8		€000
Sales		1,850
Cost of goods sold:		
Opening inventory	100	
Purchases	1,350	
	1,450	
less Closing inventory	150	
		1,300
		550
Gross profit		
Expenses	300	
Depreciation	100	
		400
Net profit		150

Calculate three alternative measurements of profit for the company using:

(a) the money maintenance concept;
(b) the real capital maintenance concept;
(c) the maintenance of specific purchasing power.

16.12 'Historical cost accounting is simple and reliable. We should all use it as the basis of financial reporting.' Discuss.

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Part 3

ANALYSIS

17 Financial appraisal

18 International analysis

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17

Financial appraisal

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- define, calculate, explain and interpret a variety of investment ratios, including the treatment of unusual items and the principles of basic and diluted earnings per share;
- discuss the usefulness of published balance sheets as a basis for enterprise valuation;
- outline the principles of enterprise valuation through expectations and market values;
- produce an overall rational financial appraisal for simple situations and comparisons, embracing the implications of differences or changes in accounting policies.

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17.1 Introduction

Part 1 of this book explored the context of accounting, concluding in chapter 7 with coverage of ratio analysis as a tool for helping to interpret the financial statements that the accounting process produces. Part 2 considered a number of accounting issues, as applications and extensions of the basic principles established in Part 1.

Part 3, without going beyond the level implied by an introductory text, explores some of the issues that emerge from a synthesis of the early chapters. Many of the 'Why it matters' paragraphs in Part 2 have pointed out that the choice of accounting policy, by affecting the numbers used in the financial statements, will affect the impression given by those statements and by the ratios calculated from them. This last sentence is carefully worded. Different accounting policies affect the *impression*, but not the underlying events. Proper financial statement appraisal attempts to get beyond the impression.

In this chapter, we develop some of the analysis of chapter 7 a little further, and then begin to explore the practicalities of analysis and interpretation in the context of different accounting policies. Chapter 18 will begin to consider more explicitly the international and transnational scenario.

17.2 More on investment ratios

Chapter 7 (particularly section 7.9) gave a brief introduction to investment ratios, which help in analysis of financial statements from the equity investor's perspective. Now we develop this viewpoint further. A number of ratios focus on the crucial figure of earnings, i.e. on the profits of the year available for the ordinary shareholders. Before investigating these ratios in detail, it is important to consider the concept of earnings itself more carefully. Perhaps the best way to highlight the issues is to ask why the earnings figure is of interest. In essence there are two possible answers:

(a) the analyst or shareholder may want a summary figure that expresses what has happened to the business as affects the owners;
(b) the analyst or shareholder may want to know what the recent past suggests is the maintainable earnings for the future.

Why it matters *The essential difference between answers (a) and (b) above is that those items that are unlikely to recur, or unlikely to recur at a similar level of size or significance, would need to be excluded in order to provide information for purpose (b), but would need to be included for purpose (a). This issue has caused much debate and discussion over the last few decades in a number of jurisdictions. Of course, the main purpose of (b) is to predict future earnings and cash flows, but the idea that there are 'maintainable' earnings in a fast-changing world seems unlikely. Consequently, an earlier tendency to regard (b) as important has been significantly reversed, and the tendency now is to provide information largely focused on (a), i.e. providing a total picture of the results of the activities of the enterprise within the accounting period.*

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It could be argued that, provided there is full and detailed disclosure of any unusual items, the precise layout and presentation makes no difference. This is not generally accepted in practice. First, many users of financial statements do not read the small print and, second, the scope for creative manipulation of results by preparers tends to be increased, the more items are excluded from the earnings figure.

International thinking is reflected in IAS 8. This was revised in 1993. This version distinguishes three categories of item related to earnings: extraordinary items are distinguished from ordinary items, and information on some ordinary items is required to be disclosed separately in certain circumstances. IAS 8 gives two important definitions, as follows:

> Ordinary activities are any activities that are undertaken by an enterprise as part of its business and such related activities in which the enterprise engages in furtherance of, incidental to, or arising from these activities.
>
> Extraordinary items are income or expenses that arise from events or transactions that are clearly distinct from the ordinary activities of the enterprise and therefore are not expected to recur frequently or regularly.

Clearly the interpretation of 'ordinary' is crucial. What is extraordinary depends on what is ordinary, and what is ordinary to the operations of one business may not be ordinary to the operations of another. IAS 8 (1993) seems to suggest that very few items are extraordinary, but gives the examples of losses caused by natural disasters or by the expropriation of assets by governments. IAS 8 (1993) requires that the nature and amount of each distinct extraordinary item must be disclosed separately, usually in the notes to the financial statements (with the total appearing on the face of the income statement). International variability in the meaning of 'extraordinary' is great, despite a basic definition in the EU Fourth Directive: 'Income and charges that arise otherwise than in the course of the company's ordinary activities must be shown under "Extraordinary income and extraordinary charges".' In France, Italy and Spain, the resulting concept is similar to 'non-trading' or 'non-recurring'. At the other extreme, in the United Kingdom, 'extraordinary' is very narrowly defined and intended to be so rare as never to occur in practice. IAS 8 is under revision, and the concept of extraordinary items is expected to be abolished in the new version, with effect from 1 January 2005.

As a separate point, IAS 8 also requires the separate disclosure, within the results of ordinary activities, of any items that 'are of such size, nature or incidence that their disclosure is relevant to explain the performance of the enterprise', describing the nature and the amount of such items. This is even more clearly a subjective requirement, though none the worse for that. Relevance and significance are inevitably subjective factors.

'Earnings' is generally defined as the net profit after taking tax and extraordinary items into account. This is certainly the case in the relevant IASC Standard, IAS 33. International agreement on this helps to reduce the effects of the different definitions of 'extraordinary'. The discussion on 'comprehensive income' in section 6.3 should also be noted. There is an increasing tendency internationally to seek to present all gains and losses in a single statement, including what is sometimes known as 'other comprehensive income', i.e. changes to shareholder's equity that do not affect net income and are not related to receipts from, or

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dividend payments to, shareholders. Examples might be currency differences on the translation of the financial statements of foreign subsidiaries and unrealized gains on marketable securities, though this depends, of course, on the accounting policies regarding what is included in net income. Resolution of this debate will presumably affect the meaning of 'earnings'.

17.2.1 Earnings per share (EPS)

As well as a difficulty in deciding what to include in earnings for the purpose of EPS calculations, there may be two problems with the denominator (the number of shares) in the calculation, where there are:

(a) changes in the equity share capital during the financial year;
(b) securities in existence, at the end of the accounting period, with no current claim on equity earnings but that may give rise to such a claim in the future.

Broadly speaking, the first problem is dealt with by calculating the average share capital outstanding during the year. The second problem is dealt with by calculating EPS twice:

(a) the earnings are related to the number of shares actually in issue at the balance sheet date (the basic EPS), and
(b) on the assumption that all the share conversions that would make EPS lower had happened (the diluted EPS).

IAS 33 requires that listed companies should disclose the basic and the diluted earnings per share, with equal prominence, on the face of the income statement, for all periods for which the income statement figures are given.

A worked example

The number of ordinary shares of a company in issue is 2 million. In addition, there exists convertible loan stock of €500,000 bearing interest at 10 per cent. This may be converted into ordinary shares between 20X6 and 20X7 at the rate of one ordinary share for every €2 of loan stock. Assume that the corporate income tax rate is 40 per cent. Other parameters are given in Table 17.1.

The basic EPS for 20X2 will be:

$$\frac{\text{profit after tax, less preference dividends}}{\text{number of ordinary shares}} = \frac{€(700{,}000 - 50{,}000)}{2 \text{ million}} = \frac{€650{,}000}{2{,}000{,}000}$$

$$= €0.325 \text{ per share.}$$

Table 17.1 Example company figures

		€000
Profit before taxation, year to 31 December 20X2		1,000
Taxation		300
Earnings		700
Preference dividend	50	
Ordinary dividend	100	150
Retained profit for the year		550

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To calculate the diluted EPS, there are two effects to consider. First, the share capital could increase by 250,000 shares (1 share for every €2 of the €500,000 loans). Second, the 'earnings' would then increase by the amount of interest on the loan, which would no longer be payable, less the extra tax payable as a result of the removal of the interest expense. The interest at 10 per cent on €500,000 is €50,000, but the extra tax on this profit increase would be 40 per cent of €50,000, i.e. €20,000. Earnings would therefore increase by the net amount of interest saved less extra tax payable, i.e. by €50,000 – €20,000 = €30,000. The diluted EPS will be (after removing 000 from all figures):

$$\frac{€[(700 + 30) - 50]}{2{,}250} = \frac{€680}{2{,}250}$$

$$= €0.302 \text{ per share.}$$

This latter figure will be the better indication of what a potential investor would be obtaining in the long run, on the assumptions that:

(a) the current earnings figure is a meaningful figure as regards future trends;
(b) those others who have *already been given* rights to convert into newly created additional ordinary shares do so.

17.2.2 Dividend cover

The dividend cover is the number of times that a company could pay the intended dividend out of the available profits of the current year. This gives an indication of how secure the future dividend payments are likely to be. As before, alternative possibilities exist as to the inclusion or exclusion of unusual items in the calculation of the derived earnings figure.

The formula for dividend cover is:

$$\frac{\text{earnings}}{\text{total dividends on ordinary shares}}$$

The higher the ratio, the greater the coverage, or safety margin, of earnings over dividends. Note that it is perfectly possible for the dividend cover to be less than one, or to be negative. Directors often choose to maintain annual dividends in years when a poor result (even a loss) occurs, as a signal to the market of an expected upturn in performance. The dividend can be provided out of the retained profits from earlier years.

17.2.3 Dividend yield

The formula for dividend yield is:

$$\frac{\text{dividend per share}}{\text{market price per share}}$$

The ratio indicates the rate of return in terms of profit distribution that would be obtained by an investor who buys one share at the current market price. It can be compared with the ruling level of interest rates on investments, but of course it

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ignores those undistributed profits that are nevertheless attributable to the shareholders (i.e. the rest of earnings). These retained profits will help the expansion of the business and thus, if all goes well, lead to increased future dividend rates, and to eventual capital gains for the investor through a rising share price.

17.2.4 Price/earnings (P/E) ratio

The formula for the P/E ratio is:

$$\frac{\text{market price of one share}}{\text{EPS}}$$

The P/E ratio can be said to represent how much (in terms of the number of years' earnings) it is necessary to pay in order to acquire a share. It is potentially a highly volatile ratio, which will be affected both by changes in earnings per share (or in its definition), and by movements in the share price as quoted on a stock exchange.

P/E is widely regarded as important, and in some countries is published daily, for large quoted companies, in the financial pages of many newspapers. In practical terms, the P/E ratio represents the market's view of the strength or risk of the company, and of its expected further growth. A high P/E indicates that the market has a high opinion of the future prospects of the company. If company A has a P/E of 10, and company B has a P/E of 12, then 'the market' is willing to pay 12 times earnings to acquire a share in B, but only 10 times earnings to acquire a share in A. This must mean that future improvements in the performance of B are expected to be greater (or more likely) than in the case with A.

Activity 17.A

The information given in Table 17.2 is available in respect of Snow Co. In addition, the market price per ordinary share is €1.75 at 31 December Year 1 and €1.82 at 31 December Year 2.

Calculate earnings per ordinary share and price/earnings ratios for each year, and comment briefly.

Table 17.2 Snow's statistics

	Year 1	*Year 2*
Ordinary shares issued €1	1,875,000	1,875,000
8% preference shares issued €1	660,000	660,000
Dividend on ordinary shares	€225,000	€187,000
Net profit after tax	€257,500	€231,900

Feedback EPS is defined as:

$$\frac{\text{net profit} - \text{preference dividends}}{\text{number of ordinary shares}}$$

For Year 1, this amounts to:

$$\frac{€(257{,}500 - 52{,}800)}{1{,}875{,}000} = €0.109$$

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For Year 2, it comes to:

$$\frac{€(231{,}900 - 52{,}800)}{1{,}875{,}000} = €0.096$$

P/E ratio is defined as:

$$\frac{\text{market price per share}}{\text{EPS}}$$

For Year 1, this can be calculated as:

$$\frac{€1.75}{€0.109} = 16.06$$

For Year 2, it comes to:

$$\frac{€1.82}{€0.096} = 18.96$$

These results show that, whilst earnings per ordinary share have fallen for Year 2, the price/earnings ratio has risen. This presumably suggests that investors at the end of Year 2 regard the future of Snow Co. in a more favourable light than was the case at the end of Year 1.

17.3 Interpreting the balance sheet

The balance sheet is often described as a statement of financial position at a point in time. It shows the resources of the business, as well as its sources of finance. Much time has been spent in earlier chapters in exploring how the figures in a balance sheet have been arrived at.

If the user wants a complete financial picture of the business, balance sheets suffer from several significant drawbacks:

1. *Absence of items*. In general, only those items acquired through external transactions will be recognized in a balance sheet at all. Resources created within the business and resources that do not have clearly related costs, such as the collective experience of a project team or workforce, will not be included.
2. *Historical valuation of items*. Most resources are recorded in balance sheets at figures based on their original purchase price. Such historical book values may differ – often very substantially – from market values as at the date of the balance sheet. Chapter 11 examined the use of current values for some investments and chapter 16 explored the issues more generally.
3. *Effect of accrual basis*. Given the logical and mathematical interconnections between the income statement and the balance sheet, accountants have to choose between the alternative approaches of either:

   (a) calculating the figures for the income statement under defined procedures and formulae, and putting whatever number is left over in the balance sheet; or

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(b) calculating the figures in the balance sheet under defined procedures and formulae, and putting whatever number is left over in the income statement.

Although there is increasing movement by standard setters toward the second approach, accountants still adopt the first approach to dealing with some items. Emphasis is put on the income statement calculation (consider depreciation, for example) and the resulting balance sheet number is a residual, often of doubtful meaning.

4. *Flexibility of accounting policy*. The different and often conflicting implications of the common accounting conventions, and the significant degree of subjectivity involved in both choice of accounting policy and detailed application of accounting policy, lead to great flexibility of accounting numbers.

Notwithstanding all the above problems, a balance sheet is the nearest that accountants get to providing for general usage a statement of business position and resources. It can be useful, provided that the bases on which it is prepared are understood. For most assets, it can be regarded as showing, for each of the recorded resources, the lower of:

(a) the cost of the resource (or some proportion thereof in the case of a depreciated fixed asset);
(b) the benefit, i.e. the proceeds expected to be derived from the resource in the ordinary course of business.

The balance sheet figures can therefore be regarded as providing a prudent valuation for many of the recorded items, and therefore (remembering that there are also usually unrecorded resources) as a very conservative picture of the business as a whole. There is one important proviso to this statement, however: the phrase in (b) above, namely 'proceeds expected to be derived from the resource *in the ordinary course of business*'. This means that the figures follow the going concern convention and do not take account of the possibility of imminent closure of the business. Any such sudden closure would probably result in a break-up value for the business far smaller than implied by published financial statements. Note also that the above comments assume a historical cost based balance sheet, rather than one of the alternatives discussed in chapter 16.

Within the limitations inherent in the above discussion, the balance sheet figures, usually known as book values, can be used as partial indicators of business size and financial strength. Net assets, at book value, could be calculated per share, for example. Taking the Bread Co. balance sheets (see Figures 7.2 and 7.3 in chapter 7), and remembering that the share capital consists of ordinary shares of 1 nominal value, net assets per share at book value would be:

$$\text{in 20X1: } \frac{€94}{70} = €1.34 \text{ per share}$$

$$\text{in 20X2: } \frac{€106}{76} = €1.39 \text{ per share}$$

The absolute figures may not mean very much, but the trend, particularly over a longer period, may well be indicative of a company's underlying performance.

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17.4 Valuation through expectations

The key words 'value' and 'valuation', in their everyday connotations, imply some element of future orientation. The value of something might be seen as the amount of benefit expected to be derived from it (not necessarily in money terms), or possibly the amount of sacrifice necessary in order to obtain it. Pursuing this, the value of a business can be related to the benefits that are expected to flow from ownership of the business, and the value of a share in a business can be related to the benefits that are expected to flow from ownership of the share.

It is generally agreed that the correct theoretical approach to the valuation of a share in a business is to consider some defined future flows, and to discount the anticipated figures to give present value, i.e. to use the principles of discounted cash flow (DCF). Possible flows to use would include:

- the stream of expected future earnings;
- the stream of expected future cash flows of the business;
- the stream of expected future cash receipts by the investor (i.e. expected dividends and other cash receipts, e.g. proceeds of sale of shares).

In each case there is the problem, not only of predicting the size of the flows, but also of choosing a rational discount rate. The discount rate will embrace estimates of interest rates, risk positions of the business concerned, and attitude to risk of the individual investor. It will also be necessary to take account of estimates of market and economy developments, such as inflation rates and taxation policies.

In the long run, it can be suggested that the above three types of flow amount to the same thing. Earnings are in a sense nothing more than cash flows adjusted and smoothed through accounting practices – in the long run, total earnings should equal total net cash flow. And, remembering that the stream of future dividends includes the 'final' distribution when the firm is liquidated, the total dividend stream should also equal the total net cash-flow stream. The timings may, of course, be very different, and for the individual shareholder it is the capital amount expected for the share when eventually sold on the stock market, rather than a final liquidation dividend, which usually represents the final item in the dividend stream.

The assumptions necessary for quantifying any of the three flows are obviously extremely subjective. Recognition of this leads on to the third possible approach to valuation of a business, namely market values.

17.5 Valuation through market values

Suppose that you own ten shares in a company with one million issued shares, and the market value of one share as reported in the press of today's date is €6. This means that the ten shares you own have a value of €60, and also that 'the market' values the entire firm at €6 million. Such statements assume that the market values parcels of shares of different sizes on a strictly pro rata basis – which is not the case, as a parcel large enough to give influence or control (see

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chapter 14) is likely to command extra value. On the other hand, the sale of a large parcel of shares may depress the market price.

It can also be argued that the price of a share on a stock market is influenced by all kinds of factors that are extraneous to the particular business under consideration, such as general economic, political or exchange rate considerations. However, despite all these difficulties, the quoted market value in a stock market at a date does have one enormous advantage: it actually and demonstrably exists. The market value *is* (allowing for transaction costs between buyer and seller) the money benefit to be derived from selling a share, and the money sacrifice necessary to acquire a share. It may or may not be a fact justified by rational appraisal and analysis, but it is still a fact.

It can be argued that, in a perfect world with perfect knowledge and foresight, the market value would exactly equal the value calculated by discounting expected flows. This would be consistent with the Efficient Markets Hypothesis in its 'strong' form, which assumes that market prices reflect both private and public information. More realistically, it can at least be suggested that active participants in public share markets will have taken account of all available published information. At a minimum, it can be suggested that the market value of quoted shares provides the one starting point that is objective for working out the worth of a business or of an investment in it. However, the market has taken account of the estimates of cash flows, and so this argument is somewhat circular.

A more detailed consideration of theories and techniques of enterprise valuation is beyond the scope of this introductory accounting text. But, a word of warning: many valuation techniques are based on financial data which are assumed to be factual and problem-free. By now, you should know better.

17.6 Accounting policies and financial appraisal

Given that the market relies partly on accounting information to establish firm value, this leads back to ratio analysis, for which a number of limitations can be suggested, including:

- differences in accounting policies, from company to company or from year to year;
- the historical nature of accounting statements;
- changes in the value of money;
- hidden short-term fluctuations between financial statements;
- the absence of comparable data;
- differences in the environments of periods or firms being compared;
- other non-monetary factors, excluded from the financial statements completely.

Most of these difficulties can be adjusted for when undertaking real financial statement appraisal. Some of them, particularly the later ones in the list, clearly involve both highly subjective and non-financial considerations. Adjustment for such matters will need to be qualitative rather than quantitative. However, many difficulties can be analyzed through an understanding of financial accounting practices, ideas and techniques, and adjustments can be made to improve com-

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parability and the information content of figures and ratios by adjusting for differences in accounting policies.

Activity 17.B

Identify as many examples as possible where the choice of accounting policy could significantly affect the analysis and interpretation of published financial statements.

Feedback

There are many examples that could be chosen; we provide a selection for you, as follows:

- the policy on asset valuation – particularly regarding land and buildings, because historical cost may or may not be departed from – for this will affect profits (via depreciation charges) and balance sheet totals;
- depreciation policy, which will obviously affect profits and asset values;
- inventory valuations, which again will affect profits and asset values, and also liquidity ratios, through the cost flow assumptions made (LIFO, FIFO) and also the treatment of overhead costs;
- long-term contract assumptions, e.g. the policy on inclusion of activity in annual sales, and on treatment of possible future losses, and so on;
- goodwill valuation and the method of its elimination from the financial statements;
- the allocation between operating and finance lease, and the method of allocating finance charges relating to both lessee and lessor;
- research and development policy in respect of the possible capitalization of development costs and policy on any resulting amortization;
- consolidation policies – definitions relating to the distinctions between subsidiary and associate, use of acquisition or merger accounting if merger accounting is still permitted by the relevant regulatory system, and quantification of fair values will all affect the numbers in the financial statements;
- use of temporal or closing rate method for translation of foreign financial statements.

On a more general level, the subjective judgements relating to conflicting accounting conventions and concepts will all affect the numbers. There may also be changes arising from the issue of new or revised accounting standards, which can cause major differences over time within the financial statements of any particular company or group.

It is very important to understand the accounting implications of each of the possible different accounting policies outlined in the feedback above. If you do not, then you should go back to the relevant chapter in this book and revise your knowledge of the topic or topics concerned. Once you are happy that you fully understand the principles, then the only way to make further progress is through practice, and working through artificial or real-life examples. The next three activities provide some essential practice. More examples are given in the Exercises at the end of this chapter. This is an area where practice is absolutely essential!

Activity 17.C

The information in Table 17.3 is available for companies X and Y for the year ended 31 December. Both companies have identical balance sheets and operating profits for the year.

Each company is deemed to have obtained the use of another asset with a fair value €100,000 on 1 January, in respect of which no entries have yet been made in

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Table 17.3 Financial figures for X and Y (initial)

	X and Y *€000*
Fixed assets	250
Current assets	70
Current liabilities	(60)
	260
Long-term liabilities	(100)
	160
Share capital	100
Retained profits	60
	160
Operating profit for the year	30

the accounts. The asset is obtained by means of a lease, with rentals per quarter in advance of €6,500. The term of the lease is five years and the useful life of the asset is eight years.

Identify the effects on the companies' operating profits and balance sheets and any relevant ratios if the lease is treated as an operating lease by company X and a finance lease by company Y. Assume that all rentals are paid when due. The relevant finance lease calculations show an obligation under a finance lease at 31 December of €84,370, of which €17,570 is due in less than one year.

Feedback The balance sheets and operating profit would become as shown in Table 17.4.

Table 17.4 Financial figures for X and Y

	X *€000*	*Y* *€000*
Fixed assets	250	330[a]
Current assets	44[b]	44
Current liabilities	(60)	(77.57)[c]
	234	296.43
Long-term liabilities	(100)	(166.8)[c]
	134	129.63
Share capital	100	100
Retained profits	34	29.63
	134	129.63
Operating profit for the year	4[b]	(0.37)[d]

Notes:

[a] Under a finance lease the asset is capitalized at fair value of €100,000 and depreciation calculated on a straight-line basis assuming no residual value over a five-year life. Therefore, the depreciation charge is €20,000, and the net book value of the asset at 31 December is €80,000.

[b] Cash adjusted for rental payments 4 × €6,500 = €26,000. So cash is €70,000 – €26,000 = €44,000. The rental payments are charged to operating profit assuming an operating lease. So, profit is €30,000 – €26,000 = €4,000.

Continued

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[c] Current liabilities are €60,000 + €17,570 = €77,570. Long-term liabilities are €100,000 + €84,370 – €17,570 = €166,800. The interest charge is the balancing figure, i.e. interest charge = €84,370 – €(100,000 – 26,000) = €10,370.

[d] This is calculated thus:

	€000s
Operating profit for the year	30.00
less Depreciation	(20.00)
less Interest charges	(10.37)
Operating profit for the year	(0.37)

Ratio calculations for X and Y are as set out in Table 17.5.

Table 17.5 Financial ratios for X and Y

Ratio	*X*	*Y*
ROE (taking closing balance sheet figures)	$\frac{4}{134} = 2.98\%$	loss
$\frac{\text{Current assets}}{\text{Current liabilities}}$	$\frac{44}{66} = 73\%$	$\frac{44}{77.57} = 57\%$
Gearing: $\frac{\text{loans}}{\text{loans + equity}}$	$\frac{100}{234} = 42.7\%$	$\frac{166.8}{296.43} = 56.3\%$

If the lease is treated as an operating lease (as shown in company X's figures), then all relevant ratios give a stronger impression than if the lease is treated as a finance lease. When the latter applies (as with company Y), the ROE shows a loss, the liquidity ratio is decreased and the gearing ratio increased. Company Y might therefore be regarded less positively by the market than company X under this analysis. However, the only difference between them is the accounting treatment used for the leased asset.

Activity 17.D

Figure 17.1 gives summarized balance sheets for Eegrek Co. for the years 20X1 and 20X2. Figure 17.2 gives summarized income statements for the same two years. Figure 17.3 gives a statement of cash flows. The requirements are as follows:

(a) Calculate the following ratios for Eegrek for 20X1 and 20X2:

Return on capital employed (ROCE)
Return on equity (ROE)
Debtors' turnover (as a ratio, i.e. not converted to number of days)
Creditors' turnover (as a ratio, i.e. not converted to number of days)
Current ratio
Quick assets ratio
Gross profit percentage
Net profit percentage
Dividend cover
Gearing ratio

(b) Comment briefly on difficulties of comparing the two sets of ratios.

(c) Comment briefly on developments within the business over the two years.

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Figure 17.1 Balance sheets of Eegrek (€)

	20X1 Balance sheet			20X2 Balance sheet		
	Cost	Depreciation	Net	Cost	Depreciation	Net
Building	50,000	10,000	40,000	90,000	11,000	79,000
Plant	10,000	4,000	6,000	11,000	5,000	6,000
			46,000			85,000
Land			43,000			63,000
Investments at cost			50,000			80,000
Inventory			55,000			65,000
Debtors (Receivables)			40,000			50,000
Bank			3,000			—
			237,000			343,000
Ordinary shares			40,000			50,000
Share premium			12,000			14,000
Revaluation reserve			—			20,000
Retained earnings			25,000			25,000
10 per cent Debentures			100,000			150,000
Creditors (Payables)			40,000			60,000
Declared dividend			20,000			20,000
Bank			—			4,000
			237,000			343,000

Figure 17.2 Income statements of Eegrek (€)

	20X1	20X2
Sales	200,000	200,000
Cost of sales	100,000	120,000
	100,000	80,000
Expenses	60,000	60,000
	40,000	20,000
Dividends	20,000	20,000
	20,000	—
Balance of profit from before	5,000	25,000
Balance of unappropriated profit	25,000	25,000

Figure 17.3 Cash flow statement of Eegrek (€)

Cash flows from operating activities		
Cash receipts from customers	190,000	
Cash payments to suppliers	(110,000)	
	80,000	
Cash payments for operating expenses	(43,000)	
Interest paid	(15,000)	
		22,000
Cash flows from investing activities		
Purchase of investments	(30,000)	
Purchase of buildings	(40,000)	
Purchase of machinery	(1,000)	
		(71,000)
Cash flows from financing activities		
Proceeds from share issue	12,000	
Proceeds from debenture issue	50,000	
Dividends paid	(20,000)	42,000
Net reduction in cash and cash equivalents		(7,000)
Cash and cash equivalents at beginning of year		3,000
Cash and cash equivalents at end of year		(4,000)

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Feedback Suggested financial ratio calculations (in response to requirement (a)) are shown in Table 17.6.

Table 17.6 Financial ratios of Eegrek

	20X1	*20X2*
ROCE	$\frac{(40+10)}{177} = 28\%$	$\frac{(20+15)}{259} = 14\%$
ROE	$\frac{40}{77} = 52\%$	$\frac{20}{109} = 18\%$
Debtors' turnover	$\frac{200}{40} = 5$ times	$\frac{200}{50} = 4$ times
Creditors' turnover	$\frac{100}{40} = 2.5$ times	$\frac{120}{60} = 2$ times
Current ratio	$\frac{98}{60} = 1.6:1$	$\frac{115}{84} = 1.4:1$
Quick assets	$\frac{43}{60} = 0.7:1$	$\frac{50}{84} = 0.6:1$
Gross profit percentage	$\frac{100}{200} = 50\%$	$\frac{80}{200} = 40\%$
Net profit percentage	$\frac{40}{200} = 20\%$	$\frac{20}{200} = 10\%$
Dividend cover	$\frac{40}{20} = 2$ times	$\frac{20}{20} = 1$ time
Gearing ratio	$\frac{100}{177} = 56\%$	$\frac{150}{259} = 58\%$

There is one significant inconsistency between the sets of information for the two years, and this is that the land is shown at cost in year 20X1 but at a valuation €20,000 greater in 20X2. (It is clear that the increase in land from €43,000 to €63,000 represents revaluation, as a revaluation reserve of €20,000 has appeared.) Since the land is not depreciated, there is no effect on earnings, but there is certainly an effect on reserves and therefore on ROCE and ROE, in each case increasing the denominator for 20X2 and reducing the ratio as calculated.

More speculatively, there are probably dangers in the averaging assumptions made. The fixed assets shown in the balance sheet at the end of 20X1 may or may not be representative of the average fixed assets in use through 20X1. However, it is unlikely that the fixed assets shown in the balance sheet at the end of 20X2 are representative of the average fixed assets in use through that year. The 20X2 balance sheet figures would only be representative if all the additions shown in Figure 17.3 had occurred on 1 January 20X2, which is extremely unlikely. Other general points could obviously be raised as well, such as uncertainty about rates of inflation, non-monetary unrecorded items, and so on.

Even allowing for the distortions mentioned above, developments in 20X2 appear adverse and potentially dangerous. Rapid expansion of the asset base has not led to extra earnings, and so Eegrek profitability (ROCE and, especially, ROE) is very sharply reduced. The amount of dividend has been maintained (though presumably not the rate, as there are more shares in 20X2) despite the worsening scenario. Is the firm at the worst point of the investment cycle – resources poured in, returns not yet begun –

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or is it overspending to no good purpose? The ratio analysis cannot answer these subjective questions, but it can highlight the issues and dangers. Higher cost of goods sold but static sales is a distinctly discouraging sign.

Activity 17.E

You are presented with the draft accounts for EU Co. as set out in Figure 17.4. You are required to:

(a) prepare a table of ratios, showing your calculations in full, as the basis for financial analysis; state and explain any assumptions you choose to make;

Figure 17.4 Financial statements for EU Co.

Profit and Loss account for the year ended 31 December

	Notes	*20X2 €000*	*20X1 €000*
Turnover		45,056	27,756
Cost of goods sold		(35,426)	(27,313)
Gross Profit		9,630	443
Operating expenses	1	(8,613)	(9,314)
Operating profit/(loss)		1,017	(8,871)
Investment income		16	340
Interest payable		(1,596)	(935)
Loss before taxation		(563)	(9,466)
Taxation		–	–
Loss for the financial year		(563)	(9,466)
Accumulated deficit, brought forward		(12,886)	(3,420)
Accumulated deficit, carried forward		(13,449)	(12,886)

Balance sheet as at 31 December

	Notes	*20X2 €000*	*20X1 €000*
Fixed assets			
Intangible assets	2	17,700	18,700
Tangible assets		9,608	7,186
		27,308	25,886
Current assets			
Inventory		374	161
Receivables		10,287	5,387
Cash at bank and in hand		4	38
		10,665	5,586
Creditors: Amounts falling due within one year			
Trade payables		(5,498)	(3,809)
Other payables and accruals		(2,968)	(2,360)
Bank overdraft		(3,139)	(443)
		(11,605)	(6,612)
Net current liabilities		(940)	(1,026)
Total assets less current liabilities		26,368	24,860

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Figure 17.4 *Continued*

	Notes	*20X2* *€000*	*20X1* *€000*
Payables: Amounts falling due after more than one year			
Bank loans – repayable 20X7		(12,923)	(10,856)
Net assets		13,445	14,004
Capital and reserves			
Called-up share capital		132	131
Share premium account		8,062	8,059
Revaluation reserve		18,700	18,700
Profit and loss account		(13,449)	(12,886)
Total capital and reserves		13,445	14,004

Notes to the accounts

1. *Operating expenses* include the launch costs of a new magazine, first published in September 20X2 and totalling €1.15 million.
2. The *intangible fixed assets* at 31 December 20X1 represented the professional valuation of a magazine title owned by EU Co. on the basis of the amount that it was estimated the title could realize if disposed of on its own without any other assets or liabilities.

(b) write a report on the strengths and weaknesses of the company's position and progress, to the extent that the ratios, and the original information, indicate them;

(c) explain how you have dealt with the information in Notes 1 and 2 of Figure 17.4, and give reasons for your treatment.

Feedback (a) Taking the figures given at face value gives a set of ratios such as the following (money figures in €000s).

	20X2	*20X1*
Gross profit %	$\frac{9{,}630}{45{,}056} = 21.4\%$	$\frac{443}{7{,}756} = 5.7\%$
Net profit %	$\frac{(563)}{45{,}056} = (1.2\%)$	$\frac{(9{,}466)}{7{,}756} = (122.0\%)$
ROE	$\frac{(563)}{13{,}445} = (4.2\%)$	$\frac{(9{,}466)}{14{,}004} = (67.6\%)$
$\frac{\text{CA\%}}{\text{CL}}$	$\frac{10{,}665}{11{,}605} = 91.9\%$	$\frac{5{,}586}{6{,}612} = 84.5\%$
ROCE	$\frac{(563) + 1596}{13{,}445 + 12{,}923} = 8.19\%$	$\frac{(9{,}466) + 935}{14{,}004 + 10{,}856} = (34.3\%)$
Debtors turnover	$\frac{10{,}287}{45{,}056} \times 365 = 83$ days	$\frac{5{,}387}{7{,}756} \times 365 = 254$ days
Creditors turnover	$\frac{5{,}498}{35{,}426} \times 365 = 57$ days	$\frac{3{,}809}{27{,}313} \times 365 = 51$ days
Inventory turnover	$\frac{374}{35{,}426} \times 365 = 4$ days	$\frac{161}{27{,}313} \times 365 = 2$ days
Gearing	$\frac{12{,}923}{26{,}368} = 49\%$	$\frac{10{,}856}{24{,}860} = 44\%$

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The situation is obviously rather unusual, and one might suggest a number of alterations to these figures, such as:

- removing the negative profit and loss account balances from the equity total, thus making equity larger;
- removing the revaluation reserve and the intangible assets, thus making equity smaller (and removing the depreciation charge of €1 million in 20X2, making earnings larger and turning earnings into a profit);
- treating the bank overdraft as long-term (strictly, the interest added back in the ROCE calculations includes the interest on the overdraft, which is incorrect if the overdraft is short-term).

(b) Very broadly, the situation was clearly disastrous in 20X1, and has been largely stabilized in 2002 – if 20X1 was the first full year of operation, as seems likely, and the trend of development continues, then the business may survive successfully. This is by no means certain. The lenders have very little security unless the intangible asset really is saleable, and could probably demand repayment at any moment.

(c) No adjustments have been made above, but this is debatable. The operating expenses of €1.15 million *are* correctly treated as expenses. They may be exceptional, though there are certainly not extraordinary. For trend analysis, they are unlikely to recur in 20X3. The retention of the intangible assets (and the revaluation reserve) can be justified on the opportunity cost principle – the title could have been sold, but has not been. However it is most unlikely to impress a bank lender, and prudence might well argue in favour of its removal.

The last three Activities are designed to show that, whilst practice at ratio calculation is necessary, ratios by themselves are never sufficient. Enterprises are dynamic organisations operating in a dynamic environment. The uniqueness and the variability of each situation must be thoroughly digested before an intelligent appraisal can be made. In addition, the implications of accounting policies and accounting treatments must be fully considered, and adjusted for numerically or allowed for subjectively, in analysing any particular situation.

You cannot have too much practice at this. Real world published financial statements will supply as many examples as you need.

SUMMARY

- Investment ratios focus on various aspects of actual or potential share ownership. Earnings per share (EPS) is a particularly important – but perhaps dangerously simplistic – statistic.
- The definition of extraordinary items differs internationally, and such amounts should probably be included in earnings.
- The valuation of businesses can be attempted via the balance sheet, through expectations, or from market values. All these methods suffer from difficulties and uncertainties.
- A particularly important consideration is the implications of accounting policy choice or accounting policy change on the figures in, and the appropriate interpretation and analysis of, ratios. A number of examples have been explored. Ramifications and permutations of choice and change are effectively infinite.
- It is important to develop an attitude of mind when attempting an overall financial appraisal, not to seek a finite list of points to check or resolve.

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References and research

See:

- T. Plenborg, 'A comparison of the information content of US and Danish earnings', *European Accounting Review* Vol. 7, No. 1, 1998.

An interesting and perhaps representative insight into the difficulties of dealing with reporting differences in a non-national context is given in a research forum in *European Accounting Review*, Vol. 5, No. 2. The papers are as follows:

- J-C. Scheid, 'Introduction'.
- D. Alexander and S. Archer, 'Goodwill and the difference arising on first consolidation'.
- D. Alexander, S. Archer, P. Delvaille and V. Taupin, 'Provisions and contingencies: an Anglo-French investigation'.
- A. Burlaud, M. Messina and P. Walton, 'Depreciation: Concepts and practices in France and the UK'.

Self-assessment questions

Suggested answers to these multiple-choice self-assessment questions are given in Appendix D at the end of this book.

The information in Table 17.7 applies to Questions 17.1 to 17.6. You are also informed that there are 100,000 €1 ordinary shares issued, and that the company has for several years paid annual dividends totalling €5,000 per year.

Table 17.7 Data for questions

Income statement, year to 31.12.20X1	*€000*
Sales	425
Cost of goods sold	267
Gross profit	158
Operating expenses	120
Profit before interest and tax	38
Interest payable	12
Profit before taxation	26
Taxation	10
	16
Selected balance sheet items at 31.12.20X1	*€000*
Plant and equipment	40
Motor vehicles	25
Inventory	80
Payables/creditors	45
Bank overdraft	22
Long-term loan	37
Receivables/debtors	110
Accruals	18
Prepayments	12
Tax payable	10

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17.1 What is the current ratio at 31.12.20X1?

(a) 1.53.
(b) 2.00.
(c) 2.13.
(d) 2.38.

17.2 What is the debtors' collection period (in days) at 31.12.20X1?

(a) 94 days.
(b) 105 days.
(c) 141 days.
(d) 150 days.

17.3 What is the creditor's payment period (in days) at 31.12.20X1?

(a) 33 days.
(b) 39 days.
(c) 62 days.
(d) 86 days.

17.4 What is the interest cover ratio at 31.12.20X1?

(a) 1.33.
(b) 2.17.
(c) 3.17.
(d) 13.17.

17.5 What are the earnings per share, in relation to 20X1?

(a) €0.11.
(b) €0.16.
(c) €0.26.
(d) €0.38.

17.6 What is the dividend cover, in relation to 20X1?

(a) 2.2.
(b) 3.2.
(c) 5.2.
(d) 7.6.

17.7 Accountants do not include assets on balance sheets if:

(a) They are owned by someone else.
(b) They are controlled by someone else.
(c) They are expected to be sold soon.
(d) Their replacement cost exceeds their book value.
(e) They have no clear market value.
(f) All of the above.

17.8 Advertising expenditure is not capitalized because:

(a) It is usually paid for in the following year.
(b) It is intangible.
(c) It is not clear how much future benefit will flow.
(d) It is not an asset.

17.9 The market value of a listed company is not put into its balance sheet because:

(a) Market value goes up and down over time.
(b) Buyers of shares generally only buy a few shares.

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(c) Readers of financial statements are trying to assess future value of shares not the present value.
(d) Market value is not known until the balance sheet date.

17.10 If a company's share price falls, what happens to its P/E ratio and dividend yield?

	P/E ratio	*Dividend yield*
(a)	Increase	Increase
(b)	Increase	Decrease
(c)	Decrease	Increase
(d)	Decrease	Decrease

Exercises

Feedback on the first two of these exercises is given in Appendix E.

17.1 Set out below is an extract (slightly adapted) from a real set of published statements of a Dutch company, applicable as of a few years ago.

(a) For each of the two years, calculate return, using both operating profit and net profit, on stockholders' (i.e. shareholders') equity, and a gearing ratio, under both historical cost and current value bases.
(b) Write a brief explanation, clear to a non-accountant, about the differences between the figures under the two bases for profit. Which basis should be used for analysis of the group's performance?

Supplementary to Exercise 17.1

The consolidated financial statements of NV DSM are drawn up on the basis of historical cost. Below, supplementary data on the basis of current value are given. Since there is yet no generally accepted method for presenting such data, the bases of valuation and determination of income on the basis of current value are explained to the extent that they diverge from those used for the consolidated financial statements.

Fixed assets
The current value of land is generally based on appraisals, that of other tangible fixed assets is determined using price indices from external sources, making allowance for technological developments. Where lower, the recoverable value is used for valuation purposes. The value of tangible fixed assets owned by non-consolidated companies has also been restated using price indices; the effect on the equities of these companies, commensurate with the percentage of participation, is accounted for in the balance sheet.

Current assets
A revaluation is made where current inventory values diverge from the valuation in the consolidated balance sheet.

Stockholders' equity
Equity according to the consolidated balance sheet is increased by the revaluation of tangible fixed assets and inventories, after deduction of relevant deferred tax commitments and minority interests.

Operating profit
The operating profit according to the consolidated statement of income is adjusted for the additional depreciation on tangible fixed assets based on current value and for revaluation of inventories.

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Figure 17.5 Financial statements for NV DSM

Consolidated statement of income

Fl million	***Year 2***		*Year 1*	
Net sales	**10,772**		10,121	
Other operating income	**397**		243	
Total operating income		**11,169**		10,364
Amortization and depreciation	**−602**		−627	
Other operating costs	**−9,184**		−8,530	
Total operating costs		**−9,786**		−9,157
Operating profit		**1,383**		1,207
Financial income and expense		**−40**		−82
Profit on ordinary activities before taxation		**1,343**		1,125
Tax on profit on ordinary activities		**−407**		−417
Results of non-consolidated companies		**98**		83
Profit on ordinary activities after taxation		**1,034**		791
Extraordinary result after taxation		**345**		−174
Group result after taxation		**1,379**		617
Minority interests' share in result		**1**		5
Net profit		**1,380**		622

Abridged consolidated balance sheet

	Year 2		*Year 1*	
Fl million	***Historical cost***	***Current value***	*Historical cost*	*Current value*
Fixed assets	**5,070**	**5,925**	4,358	5,235
Current assets	**4,624**	**4,625**	3,988	4,000
Total assets	**9,694**	**10,550**	8,346	9,235
Stockholders' equity	**3,819**	**4,375**	3,074	3,790
Minority interests in consolidated companies	**86**	**95**	79	85
Current and long-term liabilities	**5,789**	**6,080**	5,193	5,360
Total liabilities	**9,694**	**10,550**	8,346	9,235

Consolidated statement of income, restated on the basis of current value

Fl Million	***Year 2***	*Year 1*
Operating profit		
On historical cost basis	**1,383**	1,207
additional depreciation on current value basis	**−115**	−105
difference between current value and historical cost of inventories	**20**	−65
On the basis of current value	**1,288**	1,037
Net profit		
On historical cost basis:	**1,380**	622
additional depreciation on current value basis	**−115**	−105
difference between current value and historical cost of inventories	**20**	−65
gain through loan financing	**35**	50
On the basis of current value	**1,320**	502

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Net profit
The same adjustments are applied to the net profit as to the operating profit, additionally allowing for minority interests and the gain realized through loan financing. The tax burden is not adjusted. The financing gain corresponds to the part of the revaluation adjustments in the consolidated statement of income that relates to tangible fixed assets and inventories, insofar as they are financed with loan capital.

For calculation of the gain realized through loan financing, use is made of the ratio of Group equity to equity invested in tangible fixed assets and inventories. This ratio is determined on the basis of the consolidated balance sheet of NV DSM at the end of the preceding financial year. The difference between the net result calculated on historical cost basis and the current value net result is regarded as an adjustment for capital maintenance.

The adjustment for capital maintenance, calculated with application of DSM's customary system, was Fl 60 million, Fl 75 million being accounted for by tangible fixed assets, –Fl 15 million by inventories. The profit retained largely exceeds the amount of the adjustment for capital maintenance.

17.2 You are given summarized information about two firms in the same line of business namely A and B, as shown in Figure 17.6.

Figure 17.6 Financial statements for A and B

Balance sheets at 30 June						
	A			*B*		
	€000	*€000*	*€000*	*€000*	*€000*	*€000*
Land			80			260
Buildings		120			200	
Less: Depreciation		40	80		—	200
Plant		90			150	
Less: Depreciation		70	20		40	110
			180			570
Stocks		80			100	
Debtors		100			90	
Bank		—			10	
		180			200	
Creditors	110			120		
Bank	50			—		
		160			120	
			20			80
			200			650
Capital b/forward			100			300
Profit for year			30			100
			130			400
Less: Drawings			30			40
			100			360
Land revaluation			—			160
Loan (10 per cent p.a.)			100			130
			200			650
Sales			1,000			3,000
Cost of goods sold			400			2,000

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You are required to:

(a) produce a table of ratios calculated for both businesses;

(b) write a report briefly outlining the strengths and weaknesses of the two businesses, including comment on any major areas where simple use of the figures could be misleading.

Figure 17.7 Financial statements for D

Summary Balance Sheet

	31.12.07 Actual €000	*31.12.08 Budget €000*	*31.12.08 Actual €000*
Fixed assets			
Tangible assets	957	1,530	1,620
Current assets			
Inventory	205	290	325
Debtors	305	720	810
Cash and bank balances	175	70	—
	685	1,080	1,135
Creditors: Amounts due within one year			
Trade creditors	175	505	545
Other creditors	187	325	310
Bank overdraft	—	—	80
	362	830	935
Net current assets	323	250	200
Creditors: Amounts due in more than one year	—	360	360
	1,280	1,420	1,460
Capital and reserves			
Called-up share capital	800	800	800
Share premium account	200	200	200
Reserves	280	420	460
	1,280	1,420	1,460

Income statements

	2007 Actual €000	*2008 Budget €000*	*2008 Actual €000*
Sales	2,560	4,500	5,110
Cost of sales	(1,700)	(3,150)	(3,580)
Gross profit	860	1,350	1,530
Admin. and distribution costs	(655)	(880)	(1,084)
Operating profit	205	470	446
Interest payable	—	(20)	(35)
	205	450	411
Taxation	(95)	(200)	(185)
	110	250	226
Extraordinary items	9	(2)	3
	119	248	229
Dividends	(82)	(108)	(49)
Retained earnings	37	140	180

The opening inventory value figures were €135,000 2007 actual and €210,000 2008 budget.

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17.3 Repeat Exercise 1.4 from chapter 1. Do you think that users know what to ask for from their accountant or financial adviser?

17.4 Cross-sectional analysis (comparisons between different businesses over the same period) and trend analysis (comparisons between the same business over different periods) both suffer from significant limitations. What are the limitations of each form of analysis? How can they be overcome, and to what extent?

17.5 'Financial ratios are only as good as the accounting information from which they are calculated.' Discuss.

17.6 The details in Figure 17.7 relate to D Co. Using that information and appropriate ratios, prepare an analyzed financial report on the above company.

17.7 Set out in Figure 17.8 are summarized balance sheets and income statements for F Co. for 20X1 and 20X2.

Figure 17.8 Financial statements for F

Summarized balance sheets at year end (€m)

		20X2			*20X1*		
Fixed assets							
Tangible	– not yet in use		49			41	
	– in use		295			237	
			344			278	
Investments			1			1	
Loan redemption fund			1			1	
				346			280
Current assets							
Inventory			42			41	
Debtors	– trade	4			4		
	– other	4			4		
			8			8	
Bank			2			5	
Cash			2			2	
			54			56	
Creditors	– due within one year						
	– trade	60			60		
	– other	87			112		
			147			172	
Net current liabilities				93			116
Total assets *less* current liabilities				253			164
Creditors – due between one and five years				61			1
Provision for liabilities and charges				4			3
Net assets				188			160
Capital and reserves							
Ordinary shares of €0.1 each				19			19
Preference shares of €1 each				46			46
Share premium				1			1
Profit and loss account				122			94
				188			160

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Figure 17.8 ***continued***

Summarized income statements for the year (€m)

		20X2		*20X1*
Sales		910		775
Raw materials and consumables		730		633
		180		142
Staff costs	77		64	
Depreciation of tangible fixed assets	12		10	
Other operating charges	38		30	
		127		104
		53		38
Other operating income		4		3
		57		41
Net interest payable		5		4
		52		37
Profit sharing – employees		2		1
		50		36
Taxation		17		12
		33		24
Preference dividends		2		2
		31		22
Ordinary dividends		3		2
		28		20
Net interest payable:				
interest payable		12		9
interest receivable		(1)		(1)
interest capitalized		(6)		(4)
		5		4

You are required to:

(a) prepare a table of ratios, covering all aspects of interpretation as far as the information allows, for each of the two years.

(b) consider the following statement: 'The situation of the business has got worse, and anyone owning ordinary shares in F Co. would be advised to sell them as soon as possible.' Write a report explaining fully whether you agree or disagree, and why.

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18

International analysis

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OBJECTIVES

After studying this chapter carefully, you should be able to:

- understand the difficulties caused by problems when translating technical accounting terms in the context of financial statements;
- demonstrate an awareness of the implications of the existence of different financial cultures, and an awareness that what is typical in one environment may be abnormal in another;
- outline ways in which multinational enterprises can mitigate difficulties for the analyst;
- apply your knowledge and understanding to appraising performance of enterprises involving different sets of GAAP;
- adjust financial statements in appropriate ways towards benchmark policies to increase comparability, as a prelude to overall appraisal;
- demonstrate an awareness of the subjectivity that may be involved in financial statement preparation and appraisal.

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18.1 Introduction

The analysis of financial statements is hard enough even when limited to reporting within one country. This is because of the complexity of the economic world and because of the incentives that some preparers of financial statements have to mislead the users. When trying to compare companies internationally, the difficulties multiply, including differences under the following headings:

- language problems;
- differences in financial culture;
- valuation of assets;
- measurement of profits;
- availability of published accounting data;
- extent and type of audit;
- formats of financial statements;
- frequency of reports;
- quantity of data disclosed;
- different currencies;
- biases in the accounting data;
- user-friendliness of annual reports.

International comparative analysis might be undertaken by many users of financial statements, including:

- brokers, investment analysts and journalists on behalf of shareholder investors;
- bankers and other creditors when deciding on lending;
- multinational companies when appraising existing or potential subsidiaries or competitors.

If analysts are unaware of the international differences, they will make the wrong investment decisions. If they try to make adjustments, this will be time-consuming and expensive. If they restrict themselves to their own home market, they will miss out on valuable opportunities for investment and the spreading of risk.

Several of the areas of difficulty listed above have been discussed earlier in this book. This chapter examines the first four and then addresses potential solutions for interpreters of financial statements.

18.2 Language

Language is very obvious as a problem for international comparisons. This might be thought to be trivial in the sense that:

- many people can read more than one language;
- many large companies provide translations into English;
- experts can always be hired to translate (and they are a lot cheaper than accountants or financiers).

Indeed, compared to some of the other problems mentioned above, language *is* comparatively easy. Nevertheless, there are many pitfalls to be avoided.

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Activity 18.A Reappraise Table 1.1 from Chapter 1, which gives some examples showing how easy it is to be confused within the English language. Make a note of any additional English-language differences you have come across in later chapters.

Feedback There are several technical term differences that you may have come across in this book or in your wider reading, such as leverage (US) for gearing (UK), or fiscal year (US) for financial year (UK). Two aspects are worthy of discussion here. The UK term 'fixed assets', which the IASB refers to as 'non-current assets', as does the US, includes 'Property, Plant and Equipment', which is the title of IAS 16. However, the word 'property' itself can have different meanings. In the UK its meaning is restricted to land and buildings, but in the US it may have wider implications, to include tangible assets generally.

A second particular problem concerns the terms 'provision' and 'reserve'. In the UK, as the words are used in practice, a provision is an estimated liability *or* a reduction in the recorded value of an asset (as in 'provision for doubtful debtors'). A reserve is a part of shareholders' equity that arises from some gain and is not represented by shares. The IASB in its Glossary of Terms defines a provision as a liability of uncertain timing or amount, as FRS 12 does in the United Kingdom. This clearly excludes the second of the two meanings, i.e. the reduction in the recorded value of an asset, still in common usage in the UK. 'Reserve', in the US, is used much more loosely than in the UK, to include estimated liabilities and adjustments against the value of assets (as in 'reserve for doubtful receivables'). The word 'reserve' does not appear at all in the IASB Glossary because of this problem. Great care is needed in interpreting such terms. Further, the various usages suggested here may change over time.

The problem with the two types of English (UK and US) is, of course, not just that the language is different (the US version having largely evolved out of seventeenth century UK English) but that the words that exist in both languages often mean something different. There is less scope for this sort of confusion when an American is translating from Japanese!

The importance of this problem is not confined to English-speaking countries. Many European companies produce translations, usually into approximately US English. However, these statements may have unreliable or misleading translations, partly because the work is often carried out by those who are not expert in accounting. At worst, the English version may be little more than a marketing document. Such translated statements are, of course, not the real statutory statements, nor do they have to obey UK or US rules, and so they may be extracts or manipulations of the original.

Some examples of translation problems will help to illustrate these points.

18.2.1 Three examples of translation difficulties

Example 1

The following is an extract from an English-version annual report of Total Oil:

> Foreign currency balance sheets are converted into French francs on the basis of exchange rates at 31 December. The conversion is applied to fixed assets as well as

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to monetary assets and liabilities. Gains or losses on translation of their balance sheets at the end of the previous year are dealt with …

This extract shows the word 'conversion' being used interchangeably with 'translation' because the two accounting terms are the same in French (*conversion*). In English, the former means a physical act of exchange, whereas the latter (which would be correct here) means an accounting calculation.

Example 2

A further extract, as found in earlier years of Total Oil reports, states:

> However, as concerns newly acquired companies the excess of the TOTAL Group's investment in such companies … is capitalized in the consolidated balance sheet and is not amortized … . These surplus values are depreciated on a straight line basis.

The expression 'surplus values' is a translation of the French *survaleurs*. The English accounting expression would have been 'goodwill'.

Example 3

When matters get complicated, a translation often becomes opaque or misleading. This extract is taken from the financial statements of AEG of a few years ago. The note on consolidation techniques is very difficult to understand. It is shown below with our interpretation.

Published translation	*Authors' suggestion*
Capital consolidation is performed using the 'book value method'. Under this method, the book values of the affiliated companies are netted against the underlying equity in these companies at the time of acquisition or initial consolidation.	Consolidation is performed using a version of fair value accounting. Under this method, the first stage is to compare the cost of the consolidated companies with the book value of the group's share of their net assets. Generally this is done at the date of acquisition, but for existing subsidiaries that have been consolidated for the first time this year, the year-end values are used.
Where the book values exceed underlying equity, the difference is allocated to the respective assets or liabilities according to their real value. A difference remaining after the allocation is shown as goodwill or disclosed as a reduction from the reserves. If the book values fall below the underlying equity, the difference is recorded as 'reserve arising from consolidation'.	Where cost exceeds net assets, the difference is allocated to the subsidiary's assets and liabilities up to and in proportion to their fair values. Any excess remaining is goodwill, which is either shown as an asset or written off against reserves. Where the initial exercise leads to a negative difference, this is shown as a 'reserve arising from consolidation'.

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These three examples are illustrations of the point that, although the language may be of good quality, the translation is often not done by accountants, perhaps because bilingual accountants are very expensive to hire. For example, there are no such terms in English as 'surplus values' (second example) or 'capital consolidation' or 'book value method' (third example). Of course, none of this should be read as implying a lack of gratitude for translations: it is a very rare US or UK

Table 18.1 UK and US accounting terms

Term used in UK annual report	*US equivalent or definition*
Accounts	Financial statements
Associates	Equity investees
Capital allowances	Tax depreciation
Creditors	Accounts payable and accrued liabilities
Creditors: amounts falling due within one year	Current liabilities
Creditors: amounts falling due after more than one year	Long-term liabilities
Debtors: amounts falling due after more than one year	Other non-current assets
Employee share schemes	Employee stock benefit plans
Employment costs	Payroll costs
Finance lease	Capital lease
Financial year	Fiscal year
Fixed asset investments	Non-current investments
Freehold	Ownership with absolute rights in perpetuity
Interests in associates and joint ventures	Securities of equity investees
Loans to associates and joint ventures	Indebtedness of equity investees not current
Net asset value	Book value
Operating profit	Net operating income
Other debtors	Other current assets
Own work capitalised	Costs of group's employees engaged in the construction of plant and equipment for internal use
Profit	Income
Profit and loss account (statement)	Income statement
Profit and loss account (under 'capital and reserves' in balance sheet)	Retained earnings
Profit for the financial year	Net income
Profit on sale of fixed assets	Gain on disposal of non-current assets
Provision for doubtful debts	Allowance for bad and doubtful accounts receivable
Provisions	Long-term liabilities other than debt and specific accounts payable
Recognised gains and losses (statement)	Comprehensive income
Redundancy charges	Early release scheme expenses
Reserves	Shareholders' equity other than paid-up capital
Share premium account	Additional paid-in capital or paid-in surplus (not distributable)
Shareholders' funds	Shareholders' equity
Stocks	Inventories
Tangible fixed assets	Property, plant and equipment
Trade debtors	Accounts receivable (net)
Turnover	Revenues

Source: adapted from the British Telecom Annual Report, 1999.

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company that bothers with translation at all, presumably because there is no commercial need to do so and because it would, therefore, not be obvious which language to choose.

We include as Table 18.1 an amended version of a glossary of UK and US accounting terms, as presented in the financial statements of British Telecom, which is likely to be helpful. In practice, ad hoc translations may use a mixture of terms.

18.3 Differences in financial culture

It is not just accounting terms and accounting practices that must be disentangled before successful international comparison is possible. There are also different social, cultural and economic backgrounds that may continue to cause differences in ratios. Let us take two examples.

Example 1

Because of the long history of debt finance in Germany, it is normal for German companies to have a high gearing ratio compared to US or UK norms. However, not only is this traditional but it is also safer in Germany because of the long-run nature of bank interests in German industry. Bankers might be expected to pump money *into* an ailing company rather than to try to be the first to 'pull the plug'.

So a high gearing ratio is both more normal and less dangerous in Germany. It has been shown in earlier chapters that accounting differences probably make German gearing ratios look higher as well.

Example 2

Table 18.2 shows how the accounting treatment of supplementary employee remuneration influences the computation of the interesting total 'funds

Table 18.2 The impact of different remuneration schemes on funds generated from operations

	UK (£)	*France (FF)*	*Italy (Lire)*
Earnings	100	1,000	100,000
Add back			
Depreciation of fixed assets	250	2,500	250,000
Provision for employee pensions	80	–	–
less funds applied in the current year	(80)	–	–
Share of profits attributable to employees	–	800	–
less funds applied in the current year	–	(700)	–
Deferred employee remuneration	–	–	80,000
less funds applied in the current year			(30,000)
Funds generated from operations	350	3,600	400,000

Source: S. J. McLeay, in C. W. Nobes and R. H. Parker (eds), *Comparative International Accounting* (Harlow: Financial Times Prentice Hall, 2000), Chapter 18.

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generated from operations' for three companies (one British, one French and one Italian).

We start in column 1 with the British company, which places cash equal to pension provisions with a financial institution so that the 'funds' leave the company. For a company operating in France, there is a statutory requirement that part of the company's profits be allocated for the benefit of employees, with reinvestment in external assets within two years. In the short-term, we could consider that there is an element in Funds Generated from Operations (+FF800 in Column 2 of the example), which relates to the allocation for the current period, while the only outflow is the cash placed in external investments (–FF700).

Now compare these two approaches with the situation in Italy (column 3) where employees are entitled on leaving a company to one month's salary (at current rates of pay) for each year in service. There is no requirement for the company to place these funds in earmarked investments, although the appropriate provisions must be made. Thus, Funds Generated from Operations includes the provision (+L80,000) net of the payment to retiring employees (–L30,000).

Of course, there are many ways of constructing a cash flow statement, and the example is perhaps contentious. However, it shows that, when we compare the funds generated by companies in different countries, part of the explanation of the variability in levels of self-financing lies in the different social systems within which the companies operate.

18.4 Accounting differences

Part 2 of this book has looked at a number of accounting issues that relate to measurement and valuation. There are many examples of potential differences in accounting treatments between enterprises, and in many cases national 'norms' tend to differ, reflecting the classification issues discussed in Part 1. As we saw in chapters 7 and 17, these can have a distorting effect on ratio comparisons. Before we explore some of these in an international context, try the following revision activity.

Activity 18.B Go through Part 2 of this book, with particular attention to the 'Why it matters' paragraphs, and make a list of measurement and valuation, or accounting policy, differences that might be significant in the context of international comparison.

Feedback A suggested list of potentially important items is shown next, although you may have thought of some different ones. We list the following:

- strict historical cost or revaluations for fixed assets;
- use of percentage-of-completion or completed-contract method for long-term contracts;
- use of year-end or transaction rates for translation of foreign currency receivables and payables in an individual company's balance sheet;
- capitalization (or not) of interest on construction;
- capitalization of leases (or not);
- revaluation and depreciation (or not) of investment properties;

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- basing bad debt provisions on tax rules (or not);
- basing depreciation charges on tax rules (or not);
- valuing current-asset marketable securities at market price (or not);
- proportional or equity consolidation for joint ventures;
- calculating goodwill by reference to fair values (as opposed to book values);
- amortizing goodwill or writing it off against reserves;
- using the uniting of interests method (or not);
- using the current rate method or the temporal method for translation.

These differences may need to be dealt with in carrying out an effective analysis and comparison in an international context, as the remainder of this chapter begins to explore.

18.5 Help by multinationals

It is often cheaper for the preparer, rather than the user, of financial statements to do something about the problems of interpreting international differences. Companies wishing to raise money on the international markets may volunteer – or be forced, in the case of some stock exchange rules – to help the readers in one or more of the following ways:

1. Where possible, companies choose accounting policies for statutory domestic purposes that are most in line with international practices; for example, some Swiss companies volunteer to consolidate or to capitalize leases. At the extreme, some companies try to comply with two or more sets of rules simultaneously; for example, Royal Dutch/Shell complies with both US and Dutch rules. Companies may also volunteer for an international audit even when this is not legally necessary.
2. Companies may provide versions of the annual report that translate only the language, although this may raise the problems discussed earlier. This is common for Japanese and European companies translating into English.
3. Companies provide reports in another currency, e.g. US dollars, as well as in the local currency. These are sometimes called 'convenience statements', and a year-end translation rate is normally applied to all items. It is important to note that such convenience statements are currency translations, not GAAP-adjusted statements.
4. Companies provide reconciliation statements of net income or net assets from their domestic rules to another set. This is most obviously found in the case of companies obeying SEC rules, when a reconciliation to US GAAP is shown as a supplementary statement (e.g. Nokia, British Airways).
5. Companies carry out 'limited restatement' of some accounting policies or formats of presentation, presumably as a supplement to domestic reports. This is quite normal for Japanese companies towards US practices.
6. Companies may publish a substantial reworking and retranslation of an annual report into another set of practices and terms. This amounts to producing secondary financial statements.

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18.6 Increasing international harmonization

As discussed in chapter 5, there is a significant trend towards increasing harmonization of accounting policies amongst large listed companies, and this trend seems certain to continue. First, a number of European groups produce consolidated financial statements in accordance with, or close to, US GAAP. Second, the European Union's decision to require the use of IASB Standards for listed enterprises by 2005 will increase sharply the usage of IASs. Third, the increasingly close cooperation between a number of standard setters and the IASB, discussed in chapter 5, should lead to a reduction in the differences of principle between the different national and international systems.

An interesting example of increasing harmonization is Norsk Hydro, a large Norwegian company. Table 18.3 shows summary comparative figures for 1991, 1993 and 1999 as reported under US GAAP and Norwegian GAAP. The sharp increase in the similarity of the figures is very obvious, caused largely by new Norwegian regulations in 1992 and 1998.

Table 18.3 Example of increasing GAAP harmonization: Norsk Hydro

	1991 (Nkr million)		*1993 (Nkr million)*		*1999 (Nkr million)*	
	US GAAP	*Norwegian GAAP*	*US GAAP*	*Norwegian GAAP*	*US GAAP*	*Norwegian GAAP*
Operating income	925	610	4,037	4,599	7,735	7,754
Net financial expense	(1,207)	(1,680)	(1,935)	(2,132)	1,551	1,551
Net income (loss)	(498)	(2,169)	2,996	3,406	3,416	3,459
Shareholders' equity	19,156	6,056	22,735	19,307	59,497	58,667

Source: Norsk Hydro annual reports.

However, other examples are by no means so simple. An interesting case study which well illustrates many issues is given by a recent set of the annual financial statements of Deutsche Telekom. Like most large German companies, Deutsche Telekom has since abandoned the use of German accounting for its consolidated financial statements, so no similar figures are available for recent years. The extracts given are complicated and you should not try to understand every point on a first reading. The Annex at the end of this chapter gives, in its first portion, the complete 'summary of significant accounting principles' from the group's financial statements.

A careful reading of this part of the Annex shows that two quite distinct sets of accounting policy adjustments were involved. First, the financial statements of the parent company, as a single entity, have been prepared using German accounting principles (referred to by Deutsche Telekom as 'German GAAP'), presumably representing normal or traditional German GAAP in some sense. Second, the consolidated financial statements have been prepared, *also within the confines of German GAAP*, but as close to US GAAP as German GAAP options allow. The six bullet points listed early in the Annex, which do not claim to be exhaustive, show particular differences between German GAAP as used in the parent company's financial statements and German GAAP as used in the group financial statements. This suggests that German GAAP are usefully flexible! It also suggests

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that, when tax considerations are relevant (as they will be in the parent company accounts, but not in the group financial statements), they can have a powerful and significant influence. The financial statements themselves show that the amounts added to group assets and liabilities by the leasing policy change, highlighted in the first bullet point, total some €657 million, being the present value of the net minimum lease payments.

Why it matters *The effect of the capitalization of the relevant leases is to add €657 million to fixed assets, and an equal amount to liabilities (nearly all of it to long-term liabilities, as another note makes clear). This will significantly alter the ratios calculated for gearing and capital employed (see chapter 7). Remember that this is an issue not only of international comparison but also, given the options available within German practice, of within-country comparison.*

The second set of adjustments presented to us by Deutsche Telekom are those between German GAAP (by which is meant the German GAAP used in the group financial statements) and US GAAP. Large extracts giving details of the reconciliation are given in the second part of the Annex to this chapter. Paragraphs labelled (a) to (k) within this give explanations, in fairly technical language, of significant differences between the two sets of GAAP. These support the adjusting items then shown in the reconciliation of net income, and the reconciliation of shareholders' equity, under the two systems.

Activity 18.C

Study carefully paragraphs (a)–(k) of the Annex to this chapter, and the reconciliation of net income from German GAAP to US GAAP set out after them. Then, for items (b), (c), (f) and (h), explain in your own words the cause, and effect, of the adjustment.

Feedback Comments are as follows (labelled appropriately):

(b) *Software costs*. These have been expensed under German GAAP, but certain items would have been capitalized and amortized under US GAAP. The difference between the amounts involved, expensed under German GAAP and the net of, first, the amount involved and, second, the amortization charge that would have arisen thereon in 1999 under US GAAP, needs to be added to income under German GAAP in order to remove the effect of the additional expense, in calculating income under US GAAP.

(c) *Personnel restructuring accrual*. The essential point here is that under German GAAP the cost of employee separations (a wonderful euphemism for redundancy!) is accrued – and therefore charged as an expense – in the year of the company's announcement of its intentions. Under US GAAP this occurs only at the later time when specific employees accept the terms of the redundancy offer. The effect in 1999 has been that the redundancy expense figure under German GAAP is €97 million more than it would have been under US GAAP, and this expense amount therefore needs to be removed, i.e. added back to the German GAAP figure in the reconciliation.

(f) *Maintenance accruals*. The note in (f) is relatively straightforward. The maintenance charge under German GAAP would include amounts incurred in January to March 2000 but which relate to, i.e. are arguably necessitated by usage in, the

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year 1999. These amounts must be removed, i.e. added, for US GAAP purposes. Conversely, the reverse adjustment needs to be made in respect of corresponding amounts for January to March 1999, which under German GAAP will have been charged in 1998. The net effect is a reduction in expenses for 1999 of 2 million euros for US GAAP as compared with German GAAP.

(h) *Share offering costs*. Here again, we have a fundamental difference. Costs of the 1999 share offer have been charged as (extraordinary) expenses for German GAAP purposes, the share offer proceeds being recorded gross. Under US GAAP the share offer proceeds would be shown net, with no expense charged in the income statement. For US purposes the charge therefore has to be added back to the reported German GAAP income figure.

Activity 18.D What general conclusions could be drawn from Activity 18.C?

Feedback We suggest three points. First, the issues can be complex, and very clear thinking needs to be combined with considerable knowledge and understanding of issues discussed in Parts 1 and 2 of this book. Second, the differences and effects can be both numerous and significant in effect, unlike the Norsk Hydro situation. Third, no general conclusions can be drawn about the direction of reconciling adjustments. Different companies and different years would show different sizes and different directions of adjustment to US GAAP.

Perhaps the real point to be emphasized is that there can be no general rules. When comparing one set of GAAP accounts to another, or when comparing two enterprises that report under different GAAP systems, the only safe approach is to look at every aspect of each accounting policy in each set of financial statements, and to make sensible reconciliations and adjustments. In principle, this is no different to the need, in all analysis even at the one-country level, to make full allowance for the accounting policies applied. In practice, the international scenario may make it more complicated, but the approach is the same.

18.7 A benchmark for international comparisons

Despite the help of multinationals, interpretation remains a problem for analysts, brokers, bankers, managers, etc. This book has shown that there are deep-seated causes for accounting differences. These differences are therefore very resistant to change, and they will continue for many years to make international comparisons very difficult. The worst error for analysts is not to realize that the differences are great. The next error is to suppose that they can be adjusted for by simple multipliers or rules of thumb. The world is more complex than that. For example, although German profit numbers are often smaller than UK accountants would have calculated, the degree of understatement varies, and sometimes German profit numbers may be larger.

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The only reliable approach is to become well informed about the international differences, to read the stated accounting policies very carefully, and then to adjust for the major items line by line. Of course, help can be found in this endeavour. This book has tried to help with the first problem (education), and it now makes preliminary efforts to address the second problem (adjustments).

In order to appraise companies, it is normal to place special emphasis on a few accounting aggregates and ratios. In many ways this is particularly dangerous because the commercial world and the companies in it are more complex than can reasonably be encapsulated in a few simple numbers or ratios. For example, the fixation by some analysts on 'maintainable earnings' gives rise to efforts by companies to describe losses as 'extraordinary', 'exceptional', 'abnormal', etc., to the maximum extent allowed by the relevant regulations, in the hope that the analysts will then exclude these losses from their own analysis. Companies may also try to remove liabilities 'off balance sheet'. All these efforts will not be directly connected to the underlying reality of transactions. Despite the fact that the transactions may be well documented in the notes to the financial statements, an analyst who concentrates on a few standard totals and ratios will be misled. Of course, the scope for confusion increases dramatically in multinationals and in international comparisons.

Nevertheless, standard ratios are widely used, and emphasis here will be placed upon adjustments to 'earnings' and 'net assets', as used for many of the ratios in chapter 7. Other figures are either fairly easy to determine (such as the total of current assets, the number of shares outstanding, or the market share price) or may be easily derived from the above two key aggregates (such as cash flow or shareholders' equity). In the case of Germany, the Association of Investment Analysts (*Deutsche Vereinigung für Finanzanalyse und Anlageberatung*, DVFA) tries to adjust for the discretionary items in German statements. Its objective is particularly to adjust earnings – not to an international benchmark of course, but to a more comparable German basis. Some of the main adjustments to German published net profit figures are:

(a) exclusion of all extraordinary and prior-year items (even gains and losses on the sale of fixed assets);
(b) elimination of excess depreciation due to tax rules or for other reasons;
(c) removal of the effects of changes to long-term provisions that are largely discretionary;
(d) elimination of currency gains and losses on non-trading activities.

Our task is to go beyond national comparisons. It is necessary to take account of the major differences examined earlier; some of these differences in the sphere of measurement and valuation were summarized earlier as the bullet list in Activity 18.B.

One initial action in preparing for adjustment is to achieve a classification such as that shown in Table 5.4 in chapter 5. All the European countries in this table except for the United Kingdom, Ireland, Denmark and the Netherlands are shown on the right-hand side. For financial statements from the right-hand countries, unless the companies are using IAS or US GAAP, set out in Table 18.4 are some of the adjustments that might be necessary if one wished to move to numbers more typical of countries on the left-hand side.

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Tables 18.4 Adjustments to accounting numbers

Category	*Adjustment*
1 Conservatism	Increase net asset values
2 Historical cost	Increase net asset values
3 Translation	Extract translation adjustments from German and other users of the 'temporal' method
4 R&D	Decrease net assets by any capitalized amounts; adjust profits
5 Leases	Increase fixed assets and liabilities where leases are not capitalized
6 Pensions	Examine carefully. Extract any necessary pension provisions from shareholders' funds
7 Provisions	Increase shareholders' funds by portion of general provisions that are not liabilities
8 Tax	Decrease depreciation where caused by tax.

In more detail, a possible benchmark towards which one might wish to work for international purposes could have the following features:

1. **Earnings:**
   (a) after depreciation, interest, tax, minority profits and preference dividend;
   (b) including extraordinary items, if any are reported;
   (c) provisions for risks or contingencies not charged against profit;
   (d) tax-based provisions and depreciation not charged;
   (e) all subsidiaries included;
   (f) excluding differences on translation of foreign financial statements, but including exchange differences on transactions, loans, etc.;
   (g) excluding amortization and impairment of goodwill;
   (h) excluding depreciation of set-up costs and R&D that should be charged in the year of expenditure;
   (i) interest expenses not capitalized;
   (j) deferred tax accounted for in full.

2. **Net assets:**
   (a) standardize on historical cost for most assets but, if possible, current value of property;
   (b) FIFO not LIFO;
   (c) exclude capitalized goodwill, set-up costs, interest and R&D;
   (d) minorities included;
   (e) all subsidiaries included;
   (f) closing rate translation;
   (g) tax-based provisions and those for risks or contingencies treated as reserves;
   (h) finance leases capitalized.

Of these various adjustments, some will be simple from published financial statements and some will be capable of estimation. However, some problems will

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not be soluble from published information, although analysts may find that the above list raises useful questions to be asked at meetings with companies.

In conclusion, it is likely to remain impossible for many years to achieve precise international comparisons of earnings or net assets figures. However, this does not mean that users of financial statements should just give up and pretend that all companies are using the same rules. Approximate adjustments and informed questions will lead to better decision making; experts will be better at it than amateurs. Nevertheless, harmonization *is* increasing, and at an increasing rate. This process will receive further momentum, at least in the European sphere, in 2005. What happens after that, we will all have to wait and see.

SUMMARY

- There are many reasons for analysts to try to carry out international comparative analysis. However, it has all the problems of domestic analysis plus several others.
- Language difficulties may be severe for some analysts and some countries, but translations do not solve all the problems. Differences in financial culture and presentation are also hard to adjust for.
- Multinational companies can make several types of adjustment to assist international analysis. However, it is nearly always necessary for the analyst to do further work before international comparisons of earnings, net assets, etc. are meaningful.
- German analysts have an organized means of adjusting German results on to a standardized basis. This approach could be adopted internationally by inventing an international benchmark for comparisons and then applying it to any particular company.
- There is no substitute for an individual, careful and intelligent assessment of each situation to be analyzed or compared.

References and research

The following are some research papers in the English language that explore issues relevant to this chapter:

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Exercises

Feedback on these two exercises is given in Appendix E.

18.1 Repeat Activity 18.C in the text, but this time explain paragraphs (b), (c), (f), (g), (h) and (k) items in the reconciliation of shareholders' equity from German GAAP to US GAAP, as given in the second portion of the Annex to this chapter.

18.2 The best case study of all is probably the real-world situation. This allows you to:

- choose situations that are topical;
- choose countries about which you are both knowledgeable and interested;
- see just how difficult interpretation of financial statements in an international context can be.

Therefore:

1. obtain the published financial statements, in languages you read well, of two companies or groups of companies, from different countries, for the same year or, if possible, a series of years;
2. analyze the data in detail and produce a report on the companies' relative strengths and weaknesses. Your analysis will involve, among other things:
   (a) reading the information in full, several times,
   (b) carefully considering any language issues,
   (c) noting inconsistent accounting policies and different accounting treatments, and attempting to adjust for them to give greater comparability,
   (d) preparing ratios, as consistently as possible,
   (e) producing a report, which includes proper recognition of the weaknesses in the available information.

   This exercise can of course be repeated, using different pairs of companies. Try using one under IAS GAAP and one under national GAAP.

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ANNEX Special accounting features of Deutsche Telekom Group (from published annual report and accounts 1999)

Summary of significant accounting policies

The annual financial statements and the management report of the Deutsche Telekom Group have been prepared in accordance with the requirements of the German Commercial Code (Handelsgesetzbuch – HGB) and German Stock Corporation Law (Aktiengesetz – AktG).

The listing of its shares on the New York Stock Exchange (NYSE) as part of the initial public offering and the related requirement for Deutsche Telekom to file financial statements with the U.S. Securities and Exchange Commission (SEC) have led the Company to prepare its consolidated financial statements in conformity with international financial reporting standards. Accordingly, the Company uses accounting and valuation principles in line with those of U.S. GAAP (generally accepted accounting principles – GAAP) applicable at the balance sheet date, provided options exist under German GAAP to permit such an approach. This also serves to minimize differences between results reported in the reconciliation of German GAAP to U.S. GAAP.

The contents of these consolidated financial statements differ from financial statements prepared in accordance with U.S. GAAP only in those instances where the accounting and disclosure requirements of the HGB cannot be conformed to U.S. GAAP. These differences between German GAAP and U.S. GAAP are shown in a separate reconciliation.

Whereas the HGB requires only one year of comparative figures for the statement of income, the SEC requires the two previous years. The SEC also requires three years of cash flow statements and statements of shareholders' equity.

The consolidated balance sheet and the consolidated statement of income are prepared in accordance with the classification requirements of §298 HGB, in combination with §266 and §275 HGB. The income statement is prepared using the total cost method. All amounts shown, except per share amounts, are in millions of euros (€/EUR). The consolidated financial statements have been restated from DM into euros using the official fixed conversion rate of EUR1 = DM1.95583. Certain items have been combined in order to enhance the informative value and understanding of the consolidated financial statements. These items are shown separately in the notes. In case of changes in presentation, prior-year amounts are reclassified to conform with the current-year presentation. In accordance with §297 paragraph 1 sentence 2 HGB, the consolidated accounts also include a consolidated statement of cash flows and a segment report; in addition, the consolidated accounts also include a consolidated statement of shareholders' equity. In conformity with international practice, reporting begins with the income statement, and the statement of cash flows and the statement of shareholders' equity precede the notes to the consolidated financial statements. In line with internationally accepted reporting practice, the appropriation of net income is not included in these statements, as of the 1999 financial year. This means that, in contrast to prior years, when the consolidated statement of income and the consolidated balance sheet were prepared taking the (partial)

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appropriation of net income of the parent company into consideration, there is a change in the method of reporting as of 1999 in that the net income is now shown in the consolidated balance sheet and the appropriation of net income is not included in the consolidated statement of income.

The consolidated financial statements are prepared in accordance with uniform accounting and valuation principles. The accounting policies used in the consolidated financial statements differ from those used in the unconsolidated financial statements of the parent company. Such differences, mostly applied to conform with U.S. GAAP, include the following:

- Property, plant and equipment leased under contracts for which the risks and rewards of ownership have been assumed are capitalized. Scheduled depreciation is recorded over the useful economic life of the asset or over the term of the lease. The present value of payment obligations resulting from future lease payments are included as liabilities.
- Interest incurred while items included in property, plant and equipment were under construction has been added to construction costs.
- Direct pension obligations are measured in accordance with SFAS No. 87, using valuation methods consistent with those used for indirect pension obligations in the unconsolidated financial statements of Deutsche Telekom AG. The increase in the average life expectancy is taken into account in the measurement of all pension obligations in the consolidated financial statements.
- In the measurement of the compensation obligations to the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse), the additional accruals required according to the new 1998 life expectancy tables by Prof. Klaus Heubeck ('Richttafeln 1998') were recorded in the 1998 financial year, thus fully affecting net income. In contrast to the unconsolidated financial statements of Deutsche Telekom AG, where the accruals are spread over 4 financial years, this accrual was made in full in the consolidated financial statements.
- Accruals for the internal costs of preparing annual financial statements are not recorded.
- Investment grants received are recorded as reductions of the acquisition costs of assets.

Reconciliation to U.S. GAAP

Due to its listing on the New York Stock Exchange, Deutsche Telekom AG is required to submit, in addition to its local financial statements, annual financial statements in the format of Form 20-F to the SEC. This procedure is in accordance with the foreign integrated disclosure system for foreign companies listed on the stock exchange. In addition to the adjustments which have already been made in the consolidated balance sheet and statement of income in order to comply with U.S. GAAP, further adjustments are required in order to meet the requirements of U.S. GAAP and Form 20-F. These adjustments refer to those cases where application of U.S. GAAP is not permissible under German GAAP. The reconciliation to U.S. GAAP explains how the corresponding values of the German consolidated financial statements after U.S. GAAP adjustments comply with U.S. reporting requirements.

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Significant differences between German and United States generally accepted accounting principles

Certain property, plant and equipment on hand as of December 31, 1992 have been valued at fair values rather than at historical cost less depreciation, which is required by U.S. GAAP. The Company has not been able to quantify the effect of the difference in accounting treatment because, prior to January 1, 1993, the predecessor company did not maintain sufficiently detailed historical cost records. The fair market values recorded in the opening balance sheet of Deutsche Telekom AG at January 1, 1995 have been carried forward as the acquisition or construction costs.

(a) Value-added tax

The nondeductible capitalized VAT (capitalized prior to 1996) recorded as property, plant and equipment has, after depreciation in 1999 of EUR667 million, now been fully depreciated. In addition, in 1999 Deutsche Telekom recovered EUR379 million of VAT previously paid. German GAAP requires the capitalized VAT to be depreciated and the VAT recoveries to be recorded as other operating income. Under U.S. GAAP, the capitalized VAT is treated as a long-term receivable rather than property, plant and equipment. Therefore, neither depreciation nor other operating income are recognized.

(b) Capitalization of software costs

In preparing its financial statements in accordance with U.S. GAAP, Deutsche Telekom applied the provisions of Statement of Position (SOP) 98–1, Accounting for the Costs of Computer Software Developed or Obtained for Internal Use, for the first time in 1999. In accordance with SOP 98–1, in contrast to German GAAP, certain internal and external expenses incurred during the internal project development stage of computer software for internal use are to be capitalized and amortized over its expected useful life.

(c) Personnel restructuring

Under German GAAP, the estimated costs of employee separations have been accrued on the basis of the Company's announced intention to reduce its workforce. Under U.S. GAAP, these costs are accrued in the period that the employee accepts the offer of termination. The Company has agreed pursuant to its collective bargaining agreements with the unions that it will not unilaterally terminate the employment of its non-civil servant employees due to business reasons before the end of the year 2004. Civil servants may not be involuntarily terminated under the terms of their conditions of employment.

(d) Employee share purchase plans

Employees who participated in an employee share purchase plan during the initial public offering in 1996 and/ or the second share offering in 1999 bought shares at a discount of approximately 40 per cent. Under German GAAP, the proceeds of the offering were recorded net of such discounts. Under U.S. GAAP, the discount is treated as compensation expense.

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Employees could also participate in a financed share purchase plan. In connection with this plan, Deutsche Telekom agreed to pay banks for their services on a monthly basis (1996 initial public offering) and a yearly basis (1999 second share offering) through December 31, 2001. Under German GAAP, the costs of this plan are recognized as they are paid. Under U.S. GAAP, the costs were fully recognized in 1996 and 1999, respectively.

(e) Deferred income including derivatives

In contrast to German GAAP, under which income from a basic agreement between T-Mobil and VIAG Interkom is to be recognized in accordance with the economic useful life, this income is to be distributed over the duration of the agreement under U.S. GAAP in accordance with SEC Staff Accounting Bulletin SAB 101. Under German GAAP, gains and losses resulting from the termination of interest rate swaps are recognized in the year of termination. Under U.S. GAAP, gains and losses on interest rate swaps accounted for as hedges are amortized over the remaining outstanding period of the interest rate swap or the remaining life of the hedged position, whichever is shorter. Under U.S. GAAP, the foreign currency forward contracts and options used to hedge against the currency risk involved with a planned acquisition may not be accounted for as a hedge. The gains resulting from GBP forward exchange contracts and options used by Deutsche Telekom in 1999 therefore have to be recognized as income under U.S. GAAP. Under German GAAP, these gains are recorded, without affecting net income, as an offset against the acquisition costs of the investment.

(f) Maintenance accruals

As required by German GAAP, the costs of maintenance related to the financial year but only incurred within the first three months of the following year have been accrued at each period end. Under U.S. GAAP, the cost of maintenance is recognized in the periods incurred.

(g) Unrealized gains on marketable securities

Under German GAAP, marketable debt and equity securities (including certain securities classified as other investments) are generally carried at historical cost. Under U.S. GAAP, marketable debt and equity securities other than investments accounted for by the equity method, are categorized as either trading, available for sale, or held to maturity. Securities classified as trading or available for sale are reported at fair value at the balance sheet date and held to maturity securities are reported at historical cost. Unrealized gains and losses on trading securities are recorded in net income while unrealized gains and losses on securities categorized as available for sale are recorded, net of income tax, in shareholders' equity.

(h) Share offering costs

In 1999, the Company incurred costs in connection with its second share offering. Such costs are recorded as extraordinary expenses in the income statement in accordance with German GAAP. Under U.S. GAAP, specific incremental costs directly attributable to an offering are charged against the proceeds of the offering.

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(i) Other differences

Other differences consist of the various accounting and valuation approaches that are not individually significant, including the treatment of unrealized gains on foreign currency receivables and payables that are not deferred under U.S. GAAP. Other differences related to the 1997 financial year also include the different treatment under German GAAP of foreign currency effects not affecting net income arising from the deconsolidation of subsidiaries.

(j) Income taxes

The determination of income tax expense under German GAAP differs from U.S. GAAP as follows:

- Under U.S. GAAP, in contrast to German GAAP, deferred tax assets are recognized for the estimated future tax effects attributable to tax loss carryforwards.
- Under German GAAP, deferred taxes are not recorded for temporary differences which arose during tax free periods. Under U.S. GAAP, the estimated future tax effects related to those temporary differences are recognized.
- Under German GAAP, deferred taxes have not been recognized for those temporary differences which are not expected to reverse in the foreseeable future. Under U.S. GAAP, deferred taxes are generally recognized for all temporary differences.

Deferred taxes are also provided for the income tax effects of valuation differences between U.S. GAAP and German GAAP. Deferred tax assets are measured based on enacted tax law and reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

The following table shows the differences between income tax expense determined in accordance with U.S. GAAP and German GAAP:

	1999 ***(€ million)***	*1998* *(€ million)*	*1997* *(€ million)*
Deferred taxes from the application of U.S. GAAP	**(14)**	73	(353)
Deferred taxes on U.S. GAAP/German GAAP differences	**(230)**	130	136
	(244)	203	(217)

(k) Minority interest

Under U.S. GAAP, minority interest is not included in shareholders' equity.

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Reconciliation of net income from German GAAP to U.S. GAAP

	Note	*1998 (millions of €)*	*1999 (millions of €)*
Net income as reported in the consolidated financial statements under German GAAP		2,243	1,253
Value-added tax	(a)	13	288
Software costs	(b)	4	163
Personnel restructuring accrual	(c)	(286)	(97)
Employee share purchase plans	(d)	4	(17)
Deferred income/Derivatives	(e)	20	(61)
Maintenance accruals	(f)	7	2
Share offering costs	(h)	–	238
Other differences	(i)	17	(12)
Income taxes	(j)	203	(244)
Net income in accordance with U.S. GAAP		2,225	1,513

Reconciliation of shareholders' equity from German GAAP to U.S. GAAP

	Note	*Dec. 31 1999 (millions of €)*	*Dec. 31 1998 (millions of €)*
Shareholders' equity in accordance with German GAAP		35,689	25,064
Value-added tax	(a)	196	(92)
Software costs	(b)	168	5
Personnel restructuring accrual	(c)	136	234
Employee share purchase plans	(d)	(9)	(8)
Deferred income/Derivatives	(e)	(152)	(35)
Maintenance accruals	(f)	40	34
Unrealized gains on marketable securities	(g)	1,242	800
Other differences	(i)	(31)	39
Income taxes	(j)	1,320	1,581
Minority interest	(k)	(988)	(765)
Shareholders' equity in accordance with U.S. GAAP		37,611	26,857

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APPENDICES

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APPENDIX A
Glossary of terms

This glossary is primarily written in English as used by the International Accounting Standards Board. This is largely British English, although there are many cross-references to US English. Many continental European companies translate their financial statements into a form of mid-Atlantic English.

Terms used in an entry that are themselves defined elsewhere in the glossary are shown in small capitals.

accelerated depreciation DEPRECIATION that is either at a faster rate than would be suggested by an asset's expected life or using methods that charge proportionately more depreciation in earlier years. This is most commonly found in the context of tax concessions designed to encourage investment. For the calculation of taxable income in such cases, businesses would be allowed to depreciate certain assets (such as energy-saving devices or assets in depressed regions) more quickly than accountants otherwise would. This occurs in many countries.

account A record of all the bookkeeping entries relating to a particular item. For example, the wages account would record all the payments of wages. An account in the double-entry system has a debit side (left) and a credit side (right). Often accounts are referred to as T-accounts because of the rulings on the page that divide the left from the right and underline the title. Of course, pages have now generally been replaced by spaces on a computer disk. A business may have thousands of accounts, including one for each debtor and creditor.

In the early days of accounting, there were only personal accounts (for people who owed and were owed money). Later, there were 'real' accounts for property of various sorts; and 'nominal' accounts for impersonal, unreal items like wages and electricity. Accounts may be collected together in groups in ledgers, or books of account.

'Accounts' may also mean financial statements, such as BALANCE SHEETS and PROFIT AND LOSS ACCOUNTS.

accountability The major original purpose of accounting; so that the owners of resources (now shareholders, for example) can check up on the managers or stewards of those resources (now boards of directors, for example).

accountancy and accounting Terms used interchangeably by many people. However, in the United Kingdom it tends to be, for example, the *accountancy* profession, but management *accounting*. That is, accountancy tends to be associated with the profession, and accounting with the subject matter, particularly in the context of education or theory. In the United States, the word 'accountancy' is rarer.

accounting policies The detailed methods of valuation and measurement that a particular company has chosen from those generally accepted by law, accounting standards or commercial practice. These policies must be used consistently.

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accounting principles In the United States, conventions of practice, but in the United Kingdom something more fundamental and theoretical. Thus, the American GENERALLY ACCEPTED ACCOUNTING PRINCIPLES encompasses a wide range of broad and detailed accounting rules of practice. In the United Kingdom, the detailed rules are often called practices, policies or bases; and broader matters ACCRUALS or CONSERVATISM were traditionally referred to as concepts or conventions. So, in the United Kingdom, GAAP may mean 'generally accepted accounting practices'.

accounting standards Technical accounting rules of RECOGNITION, MEASUREMENT and disclosure set by committees of accountants. The exact title of accounting standards varies from country to country. The practical use of the words seems to originate officially with the Accounting Standards Steering Committee (later the Accounting Standards Committee) in the United Kingdom in 1970.

accounts payable US expression for CREDITORS. These are amounts owed by the business, usually as a result of purchases in the normal course of trade from suppliers who allow the business to pay at some point after purchase. Discounts will often be allowed for early payment of such accounts. The total of accounts payable at the period end form part of CURRENT LIABILITIES on a BALANCE SHEET.

accounts receivable US expression for DEBTORS. These are the amounts to be paid to the business by outsiders, normally as a result of sales to customers who have not yet settled their bills. Accounts receivable are valued at the amount of the accounts, less an allowance (PROVISION in UK terminology) for any amounts thought likely to be uncollectable. Those that are fairly certain to be uncollectable are bad debts; and there may also be allowances for specific amounts expected to be uncollectable, and general allowances against the total of accounts receivable. The general allowances would be calculated in the light of past experience with bad debts. In certain countries, the size of provisions is, in effect, controlled by the amounts allowed for tax purposes. All these allowances reflect the perceived need for CONSERVATISM, particularly in the valuation of such CURRENT ASSETS. After taking into account these provisions, the total of accounts receivable will be part of CURRENT ASSETS on a BALANCE SHEET.

accruals basis of accounting The standard practice of concentrating on the period to which an expense or revenue relates rather than on the period in which cash is paid or received. Part of it is the MATCHING principle. More details are given under that heading.

accrued expenses (or accruals) Expenses that relate to a year but for which a bill will not be received until the following year. RECOGNITION of accrued expenses results from the need regularly to draw up financial statements at a fixed time (for example, at the end of a company's year).

During a year, electricity will be used or properties will be rented, yet at the year end the related bills may not have been received. Thus, at the year end, 'accrued' expenses are charged against income by accountants even though cash has not been paid nor the bills even received. The double entry for this is the creation of a CURRENT LIABILITY on the balance sheets. This practice may apply also to wages and salaries, taxes, and so on. An allocation of amounts to 'this year' and 'next year' may be necessary where a supplier's account straddles two accounting years. The practice is an example of the use of the MATCHING concept.

Similarly, some accounts of suppliers that are paid in any year may be wholly or

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partly paid on behalf of the activities of the next year. In this case, the relevant expenses for the year will have to be adjusted downwards by the accountant, and a CURRENT ASSET called 'prepayments' recorded on the balance sheet. Thus, payments of property taxes and insurance premiums may be partly prepayments.

accumulated depreciation The total amount by which the accounting value of a FIXED ASSET has so far been reduced to take account of the fact that it is wearing out or becoming obsolete (see DEPRECIATION).

acid test Name sometimes given to a ratio of some of a business's liquid assets to some of its short-term debts. It is thus one test of the likelihood of liquidity problems. It is also called the quick ratio.

activity-based costing (ABC) The practice of relating as many expenses as possible, often previously regarded as overheads, to particular production activities.

allowances US expression for one type of PROVISIONS, i.e. amounts charged against profit, in anticipation of reductions in value.

amortization A word used, particularly in North America, to refer to DEPRECIATION of INTANGIBLE ASSETS.

annual general meeting (AGM) The meeting at which shareholders may question directors on the contents of a company's annual report and financial statements; vote on the directors' recommendation for dividends; vote on replacement for retiring members of the board; and conduct other business within the company's rules.

asset Generally, something controlled that has future economic benefits. However, it turns out that to define exactly what an accountant means by an 'asset' is exceptionally difficult. A definition would be contained as part of a CONCEPTUAL FRAMEWORK, perhaps: a resource controlled by an enterprise, as a result of past events, from which future economic benefits are expected to flow to the enterprise.

associated company IASB or British term for a company over which another has significant influence. The term is not so well known in the United States. According to the EU Seventh DIRECTIVE, a company will be presumed to be an associated company if it is owned to the extent of 20 per cent or more and is not a subsidiary or joint venture (see CONSOLIDATED FINANCIAL STATEMENTS). Companies held as joint ventures will be treated as associated companies in many countries.

auditing standards Rules for the practice of auditors, formalized in a similar way to the technical rules of ACCOUNTING STANDARDS. The rules contain ethical guidelines as well as detailing the work to be covered by an audit and the standard practice for the audit report.

authorized share capital The maximum amount of a particular type of share in a particular company that may be issued. It may be interesting information to shareholders as it puts a limit on the number of co-owners.

average cost (AVCO) In the context of INVENTORY valuation, a method of determining the historical cost of a particular type of inventory. As its name suggests, the cost of any unit of inventory or material used is deemed to be the average of the unit costs at which the inventory was bought. The average can be worked out at set intervals or each time there is a further purchase. AVCO is allowed by the EU Fourth Directive and is a minority practice in some countries. See FIFO and LIFO.

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balance sheet A snapshot of the accounting records of ASSETS, LIABILITIES and equity of a business at a particular moment, most obviously the accounting year end. The balance sheet is the longest established of the main financial statements produced by a business. As its name suggests, it is a sheet of the balances from the double-entry system at a particular time. It is important to note that it is probably neither a snapshot of what the business is *worth* nor of what the separate assets are worth. This is because not all the business's items of value are recognized by accountants as ASSETS, and because the asset valuation methods used are normally based on past costs rather than on present market values.

Big Four (formerly Big Eight, then the Big Six, then Big Five) An expression used to describe the world's largest accounting firms, which have offices virtually throughout the world. In alphabetical order these are:

- Deloitte Touche Tohmatsu
- Ernst & Young
- KPMG (Klynveld Peat Marwick Goerdeler)
- PricewaterhouseCoopers

business combinations Acquisitions or mergers involving two or more companies.

capital allowances A system of DEPRECIATION used in the determination of taxable income that is unique to the British Isles. This tends to be more generous than the depreciation that accountants charge for financial accounting purposes.

capital employed The aggregate finance used by a business. Sometimes the expression is used to refer to the total of all LIABILITIES and capital; sometimes it means 'net capital employed'; that is, it excludes current liabilities.

capital lease US term for FINANCE LEASE.

capitalization The inclusion of an item in a BALANCE SHEET.

cash flow Sometimes used to refer very loosely to the amount of cash coming into or out of a business in a particular period. However, it can be used as a more precise accounting term, particularly in North America, to refer to NET INCOME with DEPRECIATION charges added back. The latter will have been deducted in the calculation of the former but is not of course a cash payment of the period in question. Thus, profit plus depreciation gives an impression of cash generated by trading operations. This is not very exact, particularly because of changes in INVENTORY (stocks) and because of outstanding credit sales and purchases that have been included in the calculation of profit but will not yet have led to cash movements. However, as a quick measure it may have its uses.

cash flow statements Financial statements whose publication is compulsory in several countries. They concentrate on the movement of cash in the year.

closing rate method UK term for the method of foreign currency translation, whereby the BALANCE SHEET items of a subsidiary are translated at the balance sheet rate, and the INCOME STATEMENT items translated at that rate or at the average for the period.

common stock US term for the ordinary shares in a corporation. Normally a majority of the ownership capital will comprise issues of common stock, though PREFERENCE/PREFERRED SHARES are also issued.

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comprehensive income All the gains and losses recorded for a period, not just those realized.

conceptual framework A theoretical structure to underlie the technical rules in accounting. Several standard setting bodies have published such frameworks since the mid-1970s.

conservatism The fundamental and ancient accounting concept that accountants should, when in doubt, show the worse picture rather than the better. Conservatism requires that assets should be shown at the lowest of all reasonable values; that all foreseeable losses should be accounted for immediately, but that profits should never be recorded until they become REALIZED. The IASB uses the word 'prudence' and does not give the concept a high status.

consistency The concept that a company should use the same rules of measurement and valuation from year to year in its financial statements. This is now well established in most developed countries. A company may be allowed to change in special circumstances, such as an alteration in ACCOUNTING STANDARDS, but the change should always be disclosed in the annual report. The purpose of consistency is to enable a better comparison of a year's profits and values with those of previous years. The concept that different *companies* should use the same rules to assist inter-company comparisons might be called UNIFORMITY.

consolidated financial statements A means of presenting the position and results of a parent and its subsidiary companies as if they were a single entity. Consolidation ignores the separation of parents and subsidiaries due to legal and geographical factors; it accounts for the group of companies as if they were a single entity. Approximately, the financial statements of all the companies in a group are added together, with adjustments to extract intra-group trading and indebtedness.

contingent liabilities Possible future obligations or present obligations that are remote or unquantifiable. They are not accounted for, in the sense of adjusting the financial statements, but are explained in the notes to the BALANCE SHEET.

creditor A 'truster', i.e. someone to whom a business owes money. The US expression is ACCOUNTS PAYABLE. Creditors are generally created by purchases 'on credit' but would include tax bills. Short-term creditors are included under 'current liabilities' on a BALANCE SHEET; they are expected to be paid within the year. If credit purchases are the cause, the title used might be 'trade creditors'.

'Long-term' creditors are those who are not expected to be paid within the year. These might be trade creditors but would more likely be holders of bonds or debentures. The latter would normally be entitled to receive interest, whereas trade creditors are generally not. However, trade creditors often offer discounts for prompt payment, which is an implied way of charging interest.

current asset An ASSET on a BALANCE SHEET that is not intended for continuing use in the business, or that is expected to turn into cash within one year. Such assets include INVENTORIES, ACCOUNTS RECEIVABLE (US)/DEBTORS (UK), and cash. Also, a balance sheet may include current asset investments.

current cost accounting (CCA) One of many possible systems designed to adjust accounting for changing prices. It is often included under the generic heading INFLATION ACCOUNTING, although its normal form does not involve adjustments for inflation but for specific price changes relating to the business's assets.

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current liabilities Generally, those amounts on a BALANCE SHEET that are expected to be paid by the business within a year. Thus they will include trade CREDITORS (UK)/ACCOUNTS PAYABLE (US), certain tax liabilities, and declared DIVIDENDS. Bank overdrafts are included on the grounds that they fluctuate in size and are technically recallable at short notice.

current purchasing power accounting (CPP) A UK term for the method of adjusting HISTORICAL COST ACCOUNTING financial statements to take account of inflation. The US equivalent is GENERAL PRICE LEVEL ADJUSTED or constant dollar.

current rate method The US term for a method of foreign currency translation. The UK term is CLOSING RATE METHOD, although this implies some greater flexibility in the choice of rates.

current ratio The CURRENT ASSETS divided by the CURRENT LIABILITIES of an enterprise at a particular date.

debtors In a BALANCE SHEET, debtors are usually mostly trade debtors, i.e. customers who have not yet paid cash. The US terminology is ACCOUNTS RECEIVABLE. Such amounts are shown as CURRENT ASSETS because they are generally expected to be paid within a year.

In a balance sheet, debtors are valued at what they are expected to pay to the business, bearing in mind the principle of CONSERVATISM. Thus, bad debts are written off, and PROVISIONS (ALLOWANCES in US terminology) are made for doubtful debts. The PROVISIONS can be both specific (against suspected debts) and general (based on the average experience of bad debts).

deferred tax Under IASB or US rules, the tax related to temporary differences between the financial reporting value of an ASSET or LIABILITY and its tax basis.

depreciation A charge against the revenues of a period to represent the wearing out, usage or consumption of FIXED ASSETS in that period. So, machinery and equipment, vehicles and buildings are generally depreciated, although land normally is not. The technique of depreciation means that accountants do not charge the whole cost of a FIXED ASSET against the revenues of the year of purchase, but they charge it gradually over the years of the use and wearing out of the asset.

deprival value The amount by which a business would be worse off if it were deprived of a particular asset. This is sometimes referred to as its 'value to the business' or 'value to the owner'.

Directives of the EU on company law Blueprints for laws that must be enacted as laws throughout the European Union. This is part of the process of harmonization of company law and accountancy. The European Commission drafts Directives, which are then adopted by the Council of Ministers and implemented into national laws. The most important Directives for accounting are the Fourth and the Seventh.

discounted cash flow (DCF) Future cash flows, adjusted to take account of their timing. Such 'discounted' cash flows are used when making investment choices between competing projects. The most reliable method of deciding which project is best and whether any particular one is worth doing is to work out each project's net present value (NPV) by adding up all the discounted expected net cash flows. The NPV calculation will include the outflow of the initial investment. A project with a positive NPV is worth doing; the project with the highest NPV is the best.

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dividend A payment by a company to its shareholders out of the profits made by the company.

earnings A technical accounting term, meaning the amount of profit (normally for a year) available to the ordinary shareholders (UK)/common stockholders (US). That is, it is the profit after all operating expenses, interest charges, taxes and DIVIDENDS on PREFERRED/PREFERENCE stock.

earnings per share (EPS) The most recent year's total EARNINGS divided by the average number of ordinary/common shares outstanding in the year.

efficient market hypothesis An elegant and important theory, usually applied to the price of shares on large stock exchanges, that all publicly available information is immediately taken into account in the price of shares. In markets such as the New York or London stock exchanges there are many buyers and sellers of shares, the prices are well known, and much other information is freely available. In such cases, one would expect that new relevant information about a company would very rapidly affect its share price.

equity An element of the balance sheet showing the owners' interests. It is equal to the total assets minus the total liabilities.

equity method A method used, particularly as part of the preparation of CONSOLIDATED FINANCIAL STATEMENTS, for the inclusion of ASSOCIATES (those companies over which a group has 'significant influence' but not a controlling interest).

exceptional items A UK expression for those items in a profit and loss account that are within the ordinary activities of the business but are of unusual size. The treatment for these is to disclose them separately in the account or the notes to it. Such items are to be distinguished from EXTRAORDINARY ITEMS.

exposure drafts Documents that precede the issue of ACCOUNTING STANDARDS. They are intended to attract response from companies, auditors, academics, investment analysts, financial institutions, etc.

extraordinary items Gains or losses that are outside the ordinary activities of the business, are of material size, and are not expected to recur. The narrowness of interpretation of this expression differs greatly internationally. Under IASB rules, such a category is no longer shown.

fair value The amount that willing buyers and sellers would exchange something for in a market at arm's length. For example, assets and liabilities of new subsidiaries are brought into consolidated accounts at fair values rather than book values. This is designed to be an estimate of their cost to the group at the date of acquisition of a subsidiary.

FEE The Fédération des Experts Comptables Européens, a Brussels-based body of European professional accountancy institutes.

FIFO (first-in, first-out) A common assumption for accounting purposes about the flow of items of raw materials or other INVENTORIES. It need not be expected to correspond with physical reality but may be used for accounting purposes. The assumption is that the first units to be received as part of inventories are the first ones to be used up or sold. This means that the most recent units are deemed to be those left at the period end. When prices are rising, and assuming a reasonably

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constant purchasing of materials, FIFO leads to a fairly up-to-date closing inventory value figure. However it gives an out-of-date and therefore low figure for the cost of sales. This leads to what many argue is an overstatement of profit figures, when prices are rising.

finance lease A contract that transfers the majority of risks and rewards of an ASSET to the lessee.

financial instrument A contract involving the creation of a financial ASSET of one enterprise and a financial LIABILITY or EQUITY instrument of another enterprise.

fiscal year US expression for the period for which companies prepare their annual financial statements. The majority of US companies use 31 December as the fiscal year end, which corresponds with the year end for tax purposes. In the United Kingdom, the expression 'fiscal year' means tax year.

fixed assets The assets that are to continue to be used in the business, such as land, buildings and machines. The complement is CURRENT ASSETS. An equivalent IASB or US expression for tangible fixed assets is 'property, plant and equipment'.

gearing A measurement of the degree to which a business is funded by loans rather than SHAREHOLDERS' EQUITY. The US expression is LEVERAGE.

generally accepted accounting principles (GAAP) A technical term, particularly used in the United States, to include the ACCOUNTING STANDARDS of the Financial Accounting Standards Board, and extant rules of predecessor bodies. Also included are the rules of the SECURITIES AND EXCHANGE COMMISSION (SEC).

general price level adjusted accounting (GPLA) A US term for a system of adjusting historical cost accounting by price indices to take account of inflation. It is also called constant dollar accounting or, in the United Kingdom, CURRENT PURCHASING POWER ACCOUNTING.

going concern An important underlying concept in accounting practice. The assumption for most businesses is that they will continue for the foreseeable future. This means that, for most purposes, the break-up or forced-sale value of the assets is not relevant.

goodwill The amount paid for a company in excess of the FAIR VALUE of its NET ASSETS at the date ot acquisition. Goodwill exists because a GOING CONCERN business is usually worth more than the sum of the accounting values of its identifiable NET ASSETS. This may be looked upon as its ability to earn future profits above those of a similar newly formed company, or it may be seen as the 'goodwill' of customers, the established network of contacts, loyal staff, skilled management, and so on.

group accounts UK expression for CONSOLIDATED FINANCIAL STATEMENTS.

historical cost accounting The conventional system of accounting, widely established throughout the world except in some countries where inflation is endemic and high. Even in the latter countries, the GENERAL PRICE LEVEL ADJUSTED system is a set of simple adjustments carried out annually from historical cost records.

holding company A company that owns or controls others. In the narrow use of the expression, it implies that the company does not actively trade but operates through various subsidiaries.

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impairment The loss of value of an ASSET below its book value (i.e. generally its depreciated cost). This is measured by comparing the book value with the recoverable amount (usually the DISCOUNTED CASH FLOWS expected from the ASSET).

income statement The statement of revenues and expenses of a particular period, leading to the calculation of net income or net profit. The format of the income statement is either 'vertical'/'statement' form or 'horizontal'/'two-sided'/'account' form.

The equivalent UK statement is the PROFIT AND LOSS ACCOUNT.

inflation accounting Usually interpreted as encompassing all sorts of systems that might adjust or replace HISTORICAL COST ACCOUNTING to take account of changing prices. Many such systems are poorly described by the term, because they do not involve a recognition of general price level movements. Systems that do adjust for inflation are called CURRENT PURCHASING POWER ACCOUNTING (UK), GENERAL PRICE LEVEL ADJUSTED ACCOUNTING (US) or constant dollar accounting (US).

intangible assets ASSETS, such as goodwill or patents, that are not physical or tangible.

interim dividend DIVIDEND payment based on the profits of less than a full accounting period.

interim report A half-yearly or more frequent report generally from companies listed on a stock exchange.

International Accounting Standards Board (IASB) The standard setting body set up in 2001 by the International Accounting Standards Committee Foundation, a private sector trust.

International Accounting Standards Committee (IASC) An organization whose purpose is to devise and promulgate international standards in order to reduce the variation of practices in financial reporting throughout the world. It was founded in 1973 by accountancy bodies and reorganized in 2001 as the IASB.

International Federation of Accountants (IFAC) A body comprising representatives from the accountancy professions of many nations. It was formed in 1977, and is based in New York. Its largest task is the organization of the four-yearly World Congresses of Accountants. It also has committees that promote international harmonization of auditing and management accounting. However, it leaves the area of accounting standards to the IASB.

International Financial Reporting Interpretations Committee (IFRIC) A subsidary committee of the IASB that issues interpretations of standards.

inventories Raw materials, work-in-progress and goods ready for sale. In the United Kingdom, the word 'stocks' is generally used instead.

investment properties Properties held by a business for investment or rental income, rather than for owner-occupation.

lease A contract whereby one party (the lessor) agrees to give the use of an ASSET to another party (the lessee) in exchange for a rental payment.

leverage US term for the degree to which a business is funded by loans rather than by shareholders' equity. In a profitable highly levered company, a percentage increase in trading profit will be magnified by the time it reaches the stockholders, because the return to the lenders is a fixed amount of interest. The equivalent UK expression is GEARING.

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liabilities Present obligations of an enterprise, arising from past events, the settlement of which is expected to result in an outflow of resources (usually cash). Most liabilities are of known amount and date. They include long-term loans, bank overdrafts and amounts owed to suppliers. There are current and non-current liabilities. The former are expected to be paid within a year from the date of the BALANCE SHEET on which they appear. Most measures of liquidity include knowing the total of current liabilities; NET CURRENT ASSETS is the difference between the current assets and the current liabilities.

Liabilities are valued at the amounts expected to be paid at the expected maturity date. In some cases, amounts that are not quite certain will be included as liabilities (PROVISIONS); they will be valued at the best estimate available.

LIFO (last-in, first-out) One of the methods available under US rules for the calculation of the cost of INVENTORIES, in those frequent cases where it is difficult or impossible to determine exactly which items remain or have been used. When prices are rising, LIFO will lead to more up-to-date values for the use of inventory in cost of sales and, thus, lower profits. Therefore, it is popular with many companies in Germany, Italy and the United States, where it is allowed for tax purposes.

However, an inventory value shown in a BALANCE SHEET may be seriously misleading as it can be based on very old prices.

matching A convention that the expenses and revenues measured in order to calculate the profit for a period should be those that can be related together for that period.

materiality A concept in IASB accounting that rules need not be strictly applied to unimportant amounts and that financial statements should not be swamped by unimportant items. For example, some companies may have very small amounts of a particular revenue, expense, ASSET or LIABILITY; if such an account would normally be shown in the financial statements, it nevertheless need not be if it is immaterial in size. This will help to make the statements clearer, by omission of trivial amounts. Materiality is also to be seen at work in the extensive rounding of numbers in financial statements.

Similarly, a strictly correct measurement or valuation method may be ignored for immaterial items. For example, the fitting of new and improved door locks on an office building is strictly an enhancement of the building and should lead to that ASSET being shown at a higher cost in the relevant BALANCE SHEET. However, the cost will be immaterial in the context of the building, and capitalization would complicate future depreciation charges. Thus, it would be normal to treat the new locks as an expense.

There is no precise definition of what is material. However, an item is immaterial if omission or mistreatment of it would not alter a reader's assessment of the financial statements. As a rule of thumb, this might be expressed as a few per cent of sales or profit.

measurement The calculation of the value of an item to be recorded in a financial statement.

merger accounting A method of accounting for a business combination. In the United States it was (until 2001) in fairly common use, under the name of POOLING OF INTERESTS, under which heading more details may be found.

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minority interests The capital provided by group shareholders who are not parent company shareholders. Many subsidiary companies are not fully owned by the parent company. This means that they are partly owned by 'minority' shareholders outside the group. In the preparation of CONSOLIDATED FINANCIAL STATEMENTS, accountants bring in 100 per cent of all ASSETS, LIABILITIES, expenses and revenues of subsidiaries. This is because the group fully *controls* the subsidiary, even if it does not fully *own* it. In such financial statements, the subsidiary is subsumed into the rest of the group, and the capital provided by the minority shareholders is separately recognized as part of the capital of the group under the heading 'minority interests'. This amount grows each time the relevant subsidiary makes a profit that is not distributed.

In the consolidated INCOME STATEMENT, the share of the group profit owned by minorities is also shown separately.

net assets The worth of a business in accounting terms as measured from its BALANCE SHEET. That is, it is the total of all the recorded ASSETS less the LIABILITIES that are owed to outsiders. Naturally, this total equals the SHAREHOLDERS' EQUITY.

However, in reality, a business is nearly always worth more than its net assets, because accountants will generally have been using HISTORICAL COST ACCOUNTING as a measurement basis, and because important assets such as the goodwill of customers will have been excluded due to the CONSERVATISM and money measurement conventions. Thus, the market capitalization of a company will nearly always be greater than its accounting 'net assets'.

net current assets The net current assets or WORKING CAPITAL of a business is the excess of the CURRENT ASSETS (such as cash, INVENTORIES and DEBTORS/ACCOUNTS RECEIVABLE) over the CURRENT LIABILITIES (such as trade creditors and overdrafts).

This is a measure of the extent to which a business is safe from liquidity problems. See also CURRENT RATIO.

net income Normal US expression for NET PROFIT in UK terminology.

net profit Normal UK expression for the excess of all the revenues over all the expenses of a business for a period. The PROFIT AND LOSS ACCOUNT of a business will show the net profit before tax and the net profit after tax. The profit is then available for distribution as DIVIDENDS (assuming there is sufficient cash) or for transfer to various RESERVES. After any DIVIDENDS on PREFERENCE SHARES have been deducted, the figure may be called EARNINGS.

net realizable value (NRV) The amount that could be raised by selling an ASSET, less the costs of the sale. Normally, NRV implies a sale in the normal course of trade; thus, there would also be a deduction for any costs to bring the ASSET into a saleable state.

nominal value Most shares have a nominal or par value. This is little more than a label to distinguish a share from any of a different value issued by the same company. Normally, the shares will be currently exchanged at above the nominal value, and the company will consequently issue any new shares at approximately the market rate.

DIVIDENDS may be expressed as a percentage of nominal value; and share capital is recorded at nominal value, any excess being recorded as SHARE PREMIUM.

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off-balance sheet finance An enterprise's obligations that are not recorded on its balance sheet. One important example of off-balance sheet finance is the existence of LEASES that are not treated as ASSETS and LIABILITIES (capitalized). Suppose that a business decided to lease most of its plant and equipment rather than buying it. Suppose, too, that it does not capitalize its leases, because it or its leases fall outside the rules or because it is in a country where capitalization is not required. Now, let us compare this company with a similar one that has borrowed money and bought all its assets. The lessee has few assets and few loans, whereas the buying company has many assets and many loans. Thus, the lessee will appear to have a much better GEARING/LEVERAGE position and a better return on capital. This is despite the fact that it is using the same amount of ASSETS and has contracted to make LEASE payments for many future years.

In several countries, it is now necessary for FINANCE LEASES to be capitalized as though owned, and for an equal LIABILITY to be created. This adjusts for the otherwise misleading off-balance sheet finance. It expresses SUBSTANCE OVER FORM. There are many other ways of achieving off-balance sheet finance. In the context of CONSOLIDATED FINANCIAL STATEMENTS, it may be possible to exclude companies that are in substance subsidiaries.

ordinary shares The normal type of shares, called COMMON STOCK in the United States. They can be distinguished from PREFERENCE SHARES.

own shares Shares in a company bought back by the company from its shareholders. In the United States, own shares are called TREASURY STOCK.

paid-in surplus US expression for SHARE PREMIUM.

par value The normal US expression for NOMINAL VALUE.

parent An enterprise that controls another (the subsidiary).

pay-back method A popular technique for appraising the likely success of projects, or for choosing between projects. It involves the analysis of their expected future net cash inflows, followed by a calculation of how many years it will take for the original capital investment to be recovered. It seems to be popular because it is simple to use and, perhaps more importantly, simple to explain to non-financial managers.

pooling of interests A method of accounting for business combinations that was fairly common in the United States until 2001. The method has several attractions to companies and it is therefore necessary for there to be rules to control its use. In the United States, these rules were to be found in APB Opinion 16, and they include that the merger should be accomplished by the exchange of shares only, so that no cash leaves the group of companies. The IASC equivalent term was 'uniting of interests', and the UK term 'merger accounting'.

Most business combinations do not fit within the rules, and so the normal 'acquisition' or 'purchase' method of preparing CONSOLIDATED FINANCIAL STATEMENTS is used.

preferred stock (US)/preference shares (UK) Shares normally having preference over ORDINARY SHARES/COMMON STOCK for DIVIDEND payments and for the return of capital if a company is wound up. That is, ordinary/common DIVIDENDS cannot be paid in a particular year until the preference/preferred DIVIDEND (generally including arrears), which is usually a fixed percentage, has been paid.

present value The value(s) of something reduced by a discount rate to allow for the time value of money.

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private limited company A company that is not allowed to create a market in its securities. Such companies have special designatory letters after their names, such as Ltd, GmbH, Sarl, BV, Srl. They are to be distinguished from PUBLIC LIMITED COMPANIES. In most countries where this distinction exists, private companies are much more numerous than public companies. Rules of disclosure, audit, profit distribution, etc., may be less onerous for private companies.

profit and loss account The UK expression for the financial statement that summarizes the difference between the revenues and expenses of a period. Such statements may be drawn up frequently for the managers of a business, but a full audited statement is normally only published for each accounting year. The equivalent US expression is INCOME STATEMENT; and generally, the IASB also uses this term.

proportional (or proportionate) consolidation A technique, used as part of the preparation of CONSOLIDATED FINANCIAL STATEMENTS for a group of companies, that brings into the CONSOLIDATED FINANCIAL STATEMENTS the group's share of all the ASSETS, LIABILITIES, revenues and expenses of the partly owned company. The method is virtually unknown in the United Kingdom and the United States, but is allowed under IASB rules and in several European countries for dealing with investments in companies that are held on a joint venture basis with one or more other investing companies.

provision A LIABILITY of uncertain timing or amount. However, the word is also used to mean an allowance against the value of an asset. A RESERVE on the other hand, is an amount voluntarily or compulsorily set aside out of profit (after it has been calculated), often in order to demonstrate that the amount is not to be distributed as DIVIDENDS.

However, US usage of the words is loose. For example, it is not unknown for accountants and others to talk about a 'bad debt RESERVE or 'pension RESERVE'; and in some continental European countries there may be very large 'provisions for contingencies' that Anglo-Saxon practice would treat as RESERVES. In US terminology, 'allowance' is often used instead of 'provision', and an amount set aside to cover an expected liability would often be called a RESERVE.

prudence A concept found in the accounting practices of nearly all countries. It implies being cautious in the valuation of ASSETS or the measurement of profit. It means taking the lowest reasonable estimate of the value of ASSETS, anticipating losses but not profits.

In the United States, 'CONSERVATISM' is the word generally used for this concept.

public limited company A company whose securities (shares and loan stock) may legally be publicly traded. In the United Kingdom, the legal form of such a company is set out in the Companies Acts. The company must have 'public limited company' (or plc) as part of its name. There are equivalents to this form in other European countries (e.g. SA, AG, NV, SpA), but in the United States the nearest equivalent is a corporation that is registered with the SECURITIES AND EXCHANGE COMMISSION. Often, the expression 'public company' is used loosely to mean companies that actually have traded shares.

quarterly reporting Abbreviated financial statements as, for example, published quarterly by companies registered with the SECURITIES AND EXCHANGE COMMISSION in the United States.

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realization convention A well-established principle of conventional accounting, that gains or profits should only be recognized when they have been objectively realized by some transaction or event. This is consistent with the concept of CONSERVATISM, which anticipates losses but never profits.

receivables The IASB and US expression for amounts of money due to a business; often known as ACCOUNTS RECEIVABLE. The UK term is DEBTORS

recognition The process of incorporating an item in a financial statement.

reducing balance depreciation A technique of calculating the depreciation charge, usually for machines, whereby the annual charge reduces over the years of an asset's life. A fixed percentage DEPRECIATION is charged each year on the cost (first year) or the undepreciated cost (subsequent years).

replacement cost accounting A system of preparing financial statements in which all ASSETS (and expenses relating to them, such as DEPRECIATION) are valued at current replacement costs.

reserves UK term for amounts notionally set aside out of profits (after the latter have been calculated), often to register the fact that they are voluntarily or compulsorily undistributable. The US equivalent is an appropriation of RETAINED EARNINGS. Reserves should be distinguished from PROVISIONS, which are charged in the calculation of profit, and represent LIABILITIES or reductions in the value of ASSETS. Of course, neither reserves nor PROVISIONS are amounts of cash. A PROVISION relates to an accounting expense, and a reserve is an accounting allocation of undistributed profit from one heading to another. Reserves belong to shareholders and are part of a total of shareholders' EQUITY, which also includes share capital. This total is represented by all the assets of the business, less the liabilities owed to outsiders.

It should be noted that this terminology is used somewhat loosely by some accountants. In the United States, 'reserve' is used to cover some of the meanings of PROVISION in the United Kingdom.

restricted surplus A US expression for amounts of past profit that are unavailable for distribution to shareholders. The UK equivalent would be 'undistributable reserves'.

retained profit/earnings Amounts of profit, earned in the preceding year and former years, that have not yet been paid out as DIVIDENDS. 'Retained earnings' is a typical US expression for such amounts, though it would also be understood in the United Kingdom. 'Retained profit' is a more usual UK expression.

revaluation Conventional accounting uses HISTORICAL COST as the basis for the valuation of ASSETS. However, under IASB and some other rules, it is acceptable to revalue fixed assets annually. These revaluations can be done on the basis of current replacement cost or NET REALIAZBLE VALUE. It is quite normal for large companies in some European countries to show land and buildings at revalued amounts in their balance sheets. Clearly, one purpose of this is to avoid a seriously misleading impression of their worth, when prices have risen substantially.

sale-and-leaseback A method of raising funds by a company without immediately depleting resources or incurring LIABILITIES. If a company owns and uses FIXED ASSETS, it may find it advantageous, for tax or other reasons, to sell them to a financial institution (the lessor) who then leases them back to the company.

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The assets do not physically move as part of this process; so the company's business is not interrupted. The company receives a lump sum, which it may need for various purposes, and agrees to make future LEASE payments. Legally, it no longer owns the ASSETS, nor does it have a legal liability. However, since the real substance of the situation is not well represented by the legal form, it has now become accounting practice for certain LEASES in several countries to be recorded as both an ASSET and a LIABILITY in the lessee's BALANCE SHEET.

sales The figure for sales recorded in the financial statements for a period, including all those sales agreed or delivered in the period, rather than those that are paid for in cash. The sales figure will be shown net of sales taxes (VAT, etc.).

In the United Kingdom, the word TURNOVER is used in the financial statements, although 'sales' is generally used in the books of account.

secret reserves Various means by which a company, particularly a financial institution, can make its true financial strength unclear in its financial statements. The purpose of this is to build up resources in case of future difficulty. If that future difficulty eventually emerges, it may be possible to hide it completely by merely absorbing it using the secret reserves. This may avoid a dangerous loss of confidence in the bank or other company concerned.

Secret reserves may be created by deliberately allowing FIXED ASSETS or INVENTORIES to be undervalued, or by creating unnecessary PROVISIONS.

The problem with such accounting practices is that they do indeed obscure the true financial position of a company from its shareholders and lenders. Thus, deliberate creation of secret reserves has gradually been outlawed in most countries.

Securities and Exchange Commission (SEC) The US government agency set up in 1934 after the Wall Street Crash of 1929. Its function is to control the issue and exchange of publicly traded shares. Companies with such shares must register with the SEC, and then obey a mass of detailed regulations about disclosure and audit of financial information. An SEC-registered company in the United States is the nearest equivalent to a PUBLIC LIMITED COMPANY in Europe. In both cases, not all such companies are listed on a stock exchange.

segment reporting The disclosure of SALES, profit or ASSETS by line of business or by geographical area.

shareholders' equity The total of the shareholders' interest in a company. This will include the original share capital, amounts contributed in excess of the PAR VALUE of shares (i.e. SHARE PREMIUM or paid-in surplus), and retained profits.

share premium Amounts paid into a company (by shareholders when they purchased shares from the company) in excess of the NOMINAL VALUE of the shares. Shares are recorded at NOMINAL VALUES. However, share premium may be treated for most purposes exactly as if it were share capital. Both are included in SHAREHOLDERS' EQUITY.

In the United States there are many equivalent expressions, e.g. 'paid-in surplus'.

significant influence The power to influence the financial and operating policies of an enterprise. Under IASB rules, this is presumed to exist once an investor has a 20 per cent or more holding in the voting shares of the enterprise.

stock US term for securities of various kinds; for example, COMMON STOCK or PREFERRED STOCK (equivalent to ordinary and preference shares in UK terminology).

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However, the word 'share' is also understood in the United States, so that 'stockholder' and 'shareholder' are interchangeable. In the United Kingdom this meaning survives, particularly in the expressions 'Stock Exchange' and 'Loan Stock'.

A source of great confusion in Anglo-American conversation is the British use of the word 'stocks' for what are called INVENTORIES in the United States.

straight-line depreciation A system of calculating the annual DEPRECIATION expense of a FIXED ASSET. This method charges equal annual instalments against profit over the useful life of the ASSET. In total, the cost of the asset less any estimated residual scrap value is depreciated. This method is simple to use and thus very popular.

substance over form The presentation in financial statements of the underlying economic substance of a particular transaction, rather than the superficial legal or technical form of it. This is a fundamental idea in accounting. For example, when plant is leased by a lessee from a lessor there is no transfer of legal ownership or creation of legal liabilities. However, in many cases, the transaction is very similar to a purchase of ASSETS and borrowing of money by the lessee. The plant will be at the lessee's premises, and the lessee will have contracted to pay a series of future LEASE payments. To concentrate on the legal form of the transaction would ignore the economic reality.

This method of thinking is taken the furthest in the United States. Another example there is the 'correction' of interest receipts or payments on loans that have a non-commercial rate of interest.

tangible assets ASSETS with physical existence, such as property, plant or equipment.

temporal method The principal method of foreign currency translation used in the United States between 1975 and 1981. It is now only to be used in particular circumstances in IASB rules, but is fairly common in Germany.

temporary difference The difference between the financial reporting value of an ASSET or LIABILITY and its basis for tax purposes.

timing difference A difference between the accounting year when certain expenses and revenues are recorded in the calculation of profit and the period when they are treated as deductions or increases in the calculation of taxable income. For example, accelerated DEPRECIATION for tax purposes will allow plant and machinery to be charged for tax purposes over a shorter period than that used by accountants as the useful life for DEPRECIATION in financial statements.

treasury stock US expression for a company's shares that have been bought back by the company and not cancelled. The shares are held 'in the corporate treasury'. They receive no DIVIDENDS and carry no votes at company meetings.

The UK equivalent term is 'OWN SHARES'. The term 'treasury stock' is confusing to a UK reader because it might appear to refer to government bonds issued by the Treasury.

true and fair view The overriding legal requirement for the presentation of financial statements of companies in the United Kingdom, most of the (British) Commonwealth and the European Union. The nearest US equivalent is 'fair presentation'.

turnover The UK expression used in PROFIT AND LOSS ACCOUNTS for the SALES revenue of an accounting period. This is shown net of value added tax.

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undistributable reserves Amounts, paid in by shareholders or notionally allocated out of profits, that are not available for distribution to the shareholders as DIVIDENDS. The US term is RESTRICTED SURPLUS.

Undistributable reserves would include SHARE PREMIUM and reserves on the REVALUATION of ASSETS.

uniformity The use of the same rules of accounting or financial statement presentation from one company to another. Improvements in uniformity are encouraged by the setting of ACCOUNTING STANDARDS. One reason for this is to improve comparability between the financial statements of different companies.

uniting of interests The IASB term for POOLING OF INTERESTS.

unusual items US term for amounts that are not outside the ordinary course of the business but that are unusual in size or incidence. The approximate UK equivalent is EXCEPTIONAL ITEMS.

window dressing The manipulation of figures in financial statements in order to make them appear better (or perhaps worse) than they otherwise would be. A company might wish to do this in order to affect the actions of existing or potential shareholders or lenders, the government, or other readers of financial statements.

working capital The difference between CURRENT ASSETS and CURRENT LIABILITIES. This total is also known as NET CURRENT ASSETS, under which entry there are more details.

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APPENDIX B
An outline of the content of the EU's Fourth Directive on Company Law

Article 1 states that the Directive relates to public and private companies throughout the European Community, except that member states need not apply the provisions to banks, insurance companies and other financial institutions (for whom a special version of the Fourth Directive has been prepared). Article 2 defines the annual accounts to which it refers as the balance sheet, profit and loss account, and notes. Reference to cash flow or funds flow statements, which are standard in some countries (e.g. Spain and the United Kingdom), is omitted. The accounts 'shall be drawn up clearly and in accordance with the provisions' of the Directive, except that the need to present a 'true and fair view' may require extra information or may demand a departure from the provisions of the Directive. Such departures must be disclosed. The Directive is intended to establish minimum standards, and 'Member States may authorize or require' extra disclosure.

Articles 3–7 contain general provisions about the consistency and detail of the formats for financial statements. There is a specified order of items, and some items cannot be combined or omitted. Corresponding figures for the previous year must be shown. Articles 8–10 detail two formats for balance sheets, one or both of which may be allowed by member states. These Articles allow some combination and omission of immaterial items, but the outline and much detail will be standard. In 2003, an extra option was added: to present using a current/non-current basis.

Articles 11 and 12 allow member states to permit small companies to publish considerably abridged balance sheets. 'Small companies' are those falling below two of the following limits: employees, 50; and balance sheet total and turnover thresholds (specified in EC unit of account), which are raised from time to time. There is also the possibility of lesser reductions for 'medium-sized companies' (see Articles 27 and 47), whose size limits are also capable of being raised, and this happened in 1984 and 1990. Articles 13 and 14 concern details of disclosure. Articles 15–21 concern the definition and disclosure of assets and liabilities. It is useful that downward adjustments in value must be disclosed (Article 15(3)(a)); this might make clearer the comparatively conservative revaluations that are common in Franco-German systems.

Articles 22–26 specify four formats for profit and loss accounts, which member states may allow companies to choose between. Two of these classify expenses and revenues by nature, and the other two classify them by stage of production. There are two in each case because vertical or two-sided versions may be chosen. However, Article 27 allows member states to permit medium-sized companies to avoid disclosure of the items making up gross profit. In this case the limits are employees, 250, and thresholds for balance sheet total and turnover, which are double those for small companies. Articles 28–30 contain some definitions relating to the profit and loss accounts.

Articles 31 and 32 set out general rules of valuation. The normal principles of accounting (including the accruals convention) are promulgated. Article 33 is a fairly

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lengthy series of member-state options on accounting for inflation or for specific price changes. Whatever happens, member states must ensure that historical cost information is either shown or can be calculated using notes to the accounts. However, member states may permit or require supplementary or main accounts to be prepared on a replacement value, current purchasing power or other basis. Revaluation of assets would entail a balancing revaluation reserve; there are detailed requirements relating to this. In 2001 and 2003, member state options were added in order to allow fair values to be used for various assets and for gains and losses to be taken to income.

Articles 34–42 relate to detailed valuation and disclosure requirements for various balance sheet items. Again, the point about the disclosure of 'exceptional' value adjustments is made, this time with specific reference to taxation-induced writings down (Articles 35(1)(d) and 39(1)(e)). The periods over which research and development expenditure and goodwill are written off are regulated (Article 37).

Articles 43–46 concern the large number of disclosures that are obligatory in the annual report, including the notes to the accounts. 'Small companies' (as in Article 11) may be partially exempted. Articles 47–51 relate to the audit and publication of accounts. In general, procedures for these matters may remain as they were under different national laws. Member states may exempt 'small companies' from publishing profit and loss accounts (Article 47(2)(b)) and from audit (Article 51). This would mean that they would only produce unaudited abridged balance sheets. Article 47(3) allows members states to permit 'medium-sized companies' (as in Article 27) to abridge their balance sheets and notes. However, this abridgement is not as extensive as that for 'small companies', and both audits and profit and loss accounts are necessary.

Articles 52–62 deal with the implementation of the Directive and with transitional problems – particularly those relating to consolidation – that awaited the EU Seventh Directive. A 'Contact Committee' was to be set up to facilitate the application of the (Fourth, then also the Seventh) Directive and to advise on amendments or additions. Article 55 called for member states to pass the necessary laws within two years of the July 1978 notification, and then to bring these into force within a further 18 months. (As Table 5.12 shows, no country managed the first of these dates.)

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APPENDIX C
An outline of the content of International Financial Reporting Standards

This appendix summarizes the content of IASs extant at the end of 2003.

IAS 1 Presentation of Financial Statements

This standard was revised in 1997 and superseded the old IAS 1, IAS 5 and IAS 13. It was revised again in 2003. The components of financial statements are the balance sheet, income statement, statement of changes in equity, cash flow statement, and notes (paragraph 6). Fair presentation is required and this may sometimes entail departure from an IFRS, which departure must then be disclosed including its numerical effect (paragraph 13).

The going concern assumption must be assessed for each set of financial statements, and departed from (in a disclosed way) when appropriate (paragraph 18). Offsetting is only allowed when specifically permitted by another standard (paragraphs 28 and 29). Comparative information must be given relating to the previous period (paragraph 33).

The current/non-current distinction is not presumed (paragraph 33). There are no required formats but there are lists of minimum contents of financial statements (paragraphs 65 and 66). There are also illustrations of formats in an appendix.

IAS 2 Inventories

Inventories should be valued at the lower of cost and net realizable value (paragraph 6). Cost includes all costs to bring the inventories to their present condition and location (paragraph 7). Where specific cost is not appropriate, FIFO or weighted average is required.

IAS 3

Replaced by IAS 27.

IAS 4

Withdrawn, because the content (on depreciation) is covered by asset standards (particularly IAS 16 and IAS 38).

IAS 5

Replaced by IAS 1 (revised).

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IAS 6

Replaced by IAS 15.

IAS 7 Cash Flow Statements

Cash flow statements are required (paragraph 1). They should classify cash flows into operating, investing and financial activities (paragraph 10). Cash and cash equivalents include short-term investments subject to insignificant risk of changes in value (paragraph 6).

Either the direct or indirect method is allowed (paragraph 18). Cash flows from taxes should be disclosed separately, within one of the three headings (paragraph 35).

IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors

Changes in policy should follow specific transitional provisions. If none, then they should be applied retrospectively, by adjusting the earliest presented opening balance of retained earnings (paragraph 21). The same applies to the correction of errors (paragraph 32).

IAS 9

Replaced by IAS 38.

IAS 10 Events after the Balance Sheet Date

Events occurring after the balance sheet date that provide additional information on conditions existing at the balance sheet date should lead to adjustment of the financial statements (paragraph 7). However, disclosure should be made for other events, if necessary for proper evaluation (paragraph 20). Proposed dividends should not be accrued (paragraph 11).

IAS 11 Construction Contracts

There is no reference to the length of a contract in its definition, but there is a requirement that the contract should be specifically negotiated (paragraph 3).

When the outcome of such a contract can be estimated reliably, revenues and costs should be estimated by stage of completion. Expected losses should be recognized (paragraph 22). The conditions for reliable estimation are (paragraph 23):

(a) revenue can be reliably measured;
(b) it is probable that the benefits will flow to the enterprise;
(c) future costs and stage of completion can be measured reliably; and
(d) costs can be identified and measured reliably.

If the outcome cannot be measured reliably, costs should be expensed and revenues should be recognized in line with recoverable costs (paragraph 32).

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IAS 12 Income Taxes

'Temporary differences' are differences between the carrying amount of an asset or liability and its tax base (paragraph 5). Deferred tax assets and liabilities should be recognized for temporary differences except when relating to goodwill (unless the amortization is tax-deductible) or certain transactions with no effect on tax or accounting profit (paragraphs 15 and 24). Deferred tax assets should not be accounted for unless sufficient future taxable income is probable (paragraphs 24 and 34). Certain deferred tax assets and liabilities relating to group companies should be recognized where the temporary differences will reverse (paragraphs 39 and 44).

Current and deferred tax assets and liabilities should use enacted or substantially enacted tax rates (paragraphs 46 and 47). Deferred tax assets and liabilities should not be discounted (paragraph 53).

Current and deferred taxes should be recognized as income or expense except to the extent that they relate to transactions not recognized in income or expense (paragraph 58).

IAS 13

Replaced by IAS 1 (revised).

IAS 14 Segment Reporting

Unusually for an IAS, the standard applies only to enterprises whose equity or debt is publicly traded (paragraph 3).

Business segments or geographical segments are distinguishable components of an enterprise with different risks and returns from other components (paragraph 9). An enterprise's primary segment reporting will be based on either business or geographical segments, depending on the dominant source and nature of the risks and returns (paragraph 26). Usually, management's internal financial reporting system will coincide with this (paragraph 27).

A reportable segment is one where sales to external customers or result or assets are 10 per cent or more of the total for the enterprise (paragraph 35). For primary reporting, an enterprise should disclose for each segment: revenue, operating result, operating assets, operating liabilities, capital expenditure and depreciation (paragraphs 50–58).

Segment reporting on other than the primary basis is also required for revenue, assets and capital expenditure (paragraphs 69 and 70).

IAS 15

Withdrawn

IAS 16 Property, Plant and Equipment

Property, plant and equipment (PPE) should be recognized when (i) it is probable that future benefits will flow from it, and (ii) its cost can be measured reliably (paragraph 8).

Initial measurement should be at cost (paragraph 15). Subsequently, the benchmark treatment is to use cost but the allowed alternative is to use an up-to-date fair value by

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class of assets (paragraphs 29, 30 and 36). Revaluations should be credited to reserves unless reversing a previous charge to income. Decreases in valuation should be charged to income unless reversing a previous credit to reserves (paragraphs 39 and 40).

Gains or losses on retirement or disposal of an asset should be calculated by reference to the carrying amount (paragraph 62).

IAS 17 Leases

Finance leases are those that transfer substantially all risks and rewards to the lessee (paragraph 3). Finance leases should be capitalized by lessees at the lower of the fair value and the present value of the minimum lease payments (paragraph 12).

Rental payments should be split into (i) a reduction of liability, and (ii) a finance charge designed to reduce in line with the liability (paragraph 17). Depreciation on leased assets should be calculated using useful life, unless there is no reasonable certainty of eventual ownership. In this latter case, the shorter of useful life and lease term should be used (paragraph 19).

Operating leases should be expensed on a systematic basis (paragraph 25).

For lessors, finance leases should be recorded as receivables (paragraph 28). Lease income should be recognized on the basis of a constant periodic rate of return (paragraph 30). The net investment method should be used (paragraph 30).

For sale and leaseback that results in a finance lease, any excess of proceeds over carrying amount should be deferred and amortized over the lease term (paragraph 57).

IAS 18 Revenue

Revenue should be measured at fair value of consideration received or receivable (paragraph 9). Revenue should be recognized when (paragraph 4):

(a) significant risks and rewards are transferred to the buyer;
(b) managerial involvement and control have passed;
(c) revenue can be measured reliably;
(d) it is probable that benefits will flow to the enterprise; and
(e) costs of the transaction can be measured reliably.

For services, similar conditions apply by stage of completion when the outcome can be estimated reliably (paragraph 20).

IAS 19 Employee Benefits

For defined contribution plans, the contributions of a period should be recognized as expenses (paragraph 45).

For defined benefit plans, the liability should be the total of the present value of the obligation, plus unrecognized actuarial gains, minus unrecognized past service costs, and minus the fair value of plan assets (paragraph 55). The income statement charge should be the total of current service cost, interest cost, expected return on assets, actuarial gains recognized, past service cost recognized, and the effect of curtailments and settlements (paragraph 62).

The actuarial valuation method is specified (one called the 'projected unit credit' method) (paragraph 65). The discount rate used should be based on the market yield on high-quality corporate bonds (paragraph 79).

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Actuarial gains and losses should be recognized on an amortization basis in income when they exceed 10 per cent of the obligation (or the fund, if greater). The amortization should be over the remaining working lives of employees in the plan (paragraph 94). Past service cost should be recognized over the period until the benefits are vested (paragraph 98).

IAS 20 Government Grants

Grants should not be credited directly to reserves but should be recognized as income in a way matched with the related costs (paragraphs 7 and 12). Grants related to assets should be deducted from the cost or treated as deferred income (paragraph 24).

IAS 21 The Effects of Changes in Foreign Exchange Rates

Transactions should be translated on the date of the transaction (paragraph 9). Subsequently, monetary balances should be translated at the closing rate, and non-monetary balances at the rate that relates to the valuation basis (e.g. historical cost) (paragraph 11). Differences on monetary items should be taken to income, unless the items amount to a net investment in a foreign entity (paragraphs 15 and 17).

The financial statements of foreign operations that are 'integral' to the operations of the parent should be treated as above (paragraph 27). Financial statements of other entities should be translated using closing rates for balance sheets and transaction rates (or, in practice, average rates) for incomes and expenses. Differences should be taken to reserves (paragraph 30).

IAS 22 Business Combinations

A uniting of interests is an unusual business combination, in which an acquirer cannot be identified (paragraph 8). Such combinations must be accounted for by the pooling of interests method (paragraph 77). All other combinations must be accounted for as acquisitions (paragraph 17).

For an acquisition, assets and liabilities should be recognized if it is probable that an economic benefit will flow and if there is a reliable measure of cost or fair value (paragraph 26). Assets and liabilities of the acquired company are brought into the consolidated financial statements at fair value. The difference between the cost of the purchase and the fair value of the net assets is recognized as goodwill. The benchmark treatment is not to apply fair valuation to the minority's proportion of net assets; the allowed alternative is to apply fair value for the whole of the net assets (paragraphs 32 and 34). Fair values are calculated without reference to intended use by the acquirer, except that certain provisions relating to the acquiree can be recognized if they arise at the acquisition (paragraphs 29 and 31).

Goodwill, when purchased, must be capitalized and amortized over its useful life. There is a rebuttable presumption that this will not exceed 20 years (paragraph 44). If the presumption is rebutted, an annual impairment test is necessary. Negative goodwill should be treated differently depending on its origin (paragraphs 61 and 62). That which relates to future losses should be recognized in future periods when losses arise. Otherwise, the negative goodwill should be recognized over the life of depreciable assets. Any excess of negative goodwill over identifiable non-monetary assets should be recognized as income immediately.

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IAS 23 Borrowing Costs

The benchmark treatment is to treat borrowing costs as expenses, but the allowed alternative is to capitalize those directly attributable to construction, etc. (paragraphs 7 and 11). SIC Interpretation 2 requires enterprises to use the chosen treatment uniformly.

In cases of capitalization, where funds are specifically borrowed, the borrowing costs should be calculated after any investment income on temporary investment of the borrowings (paragraph 15). If funds are borrowed generally, then a capitalization rate should be used based on the weighted average of borrowing costs for general borrowings outstanding during the period. Borrowing costs capitalized should not exceed those incurred (paragraph 17).

Capitalization should commence when expenditures and borrowing costs are being incurred and activities are in progress to prepare the asset for use or sale (paragraph 20). Suspension should occur when active development is suspended for extended periods, and cessation should occur when substantially all activities are complete (paragraphs 23 and 25).

IAS 24 Related Party Disclosures

Related parties are those able to control or exercise significant influence, although some exceptions are noted (paragraphs 5 and 6). Relationships and transactions should be disclosed (paragraphs 20 and 22).

IAS 25

Replaced by IAS 39 and IAS 40.

IAS 26 Reporting by Retirement Benefit Plans

This standard relates to accounting and reporting by retirement benefit plans themselves, not by employers. Separate rules are set out for defined benefit plans and defined contribution plans.

IAS 27 Consolidated Financial Statements

A subsidiary is defined as one controlled by another enterprise (paragraph 6). Certain intermediate parent companies are exempted from preparing consolidated accounts (paragraph 8).

All subsidiaries must be included, except where control is temporary because of expected sale or where there are severe long-term restrictions on the transfer of funds (paragraph 13).

The reporting dates of consolidated companies should be no more than three months different from the parent's (paragraph 19).

In parent financial statements, subsidiaries may be shown at cost or treated as available-for-sale investments (paragraph 29).

IAS 28 Investments in Associates

An associate is an enterprise over which the investor has significant influence, i.e. the power to participate in financial and operating policy decisions (paragraph 3). This is

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a rebuttable presumption when there is a holding of 20 per cent or more in the voting rights (paragraph 4).

Associates should be accounted for by the equity method in consolidated accounts, unless held for disposal in the near future (paragraph 8). In parent company accounts, associates can be held at equity or as long-term investments (paragraph 12).

IAS 29 Financial Reporting in Hyperinflationary Economies

Hyperinflation is indicated by several features, including cumulative inflation over three years of 100 per cent or more (paragraph 3).

Financial statements (including corresponding figures) should be presented in a measuring unit that is current at the balance sheet date (paragraph 8).

IAS 30 Disclosures by Banks etc

This standard requires that banks should separately disclose a large number of individual items in their financial statements or notes.

IAS 31 Reporting Interests in Joint Ventures

A joint venture is a contractual arrangement subject to joint control (paragraph 2).

Jointly controlled *operations* should be recognized by including the assets controlled and the liabilities and expenses incurred by the venturer and its share of income (paragraph 10). Jointly controlled *assets* should be recognized on a proportional basis (paragraph 16).

In the consolidated financial statements, jointly controlled *entities* should be recognized as follows (paragraphs 25 and 32):

(a) the benchmark treatment is proportional consolidation;
(b) the allowed alternative is the equity method.

However, interests held for resale or under severe long-term restrictions should be treated as investments.

IAS 32 Financial Instruments: Disclosure and Presentation

Financial instruments should be classified by issuers into liabilities and equity, which includes splitting compound instruments into these components (paragraphs 18 and 23).

Financial assets and liabilities can be set off when there is a legally enforceable right and an intention to do so (paragraph 33).

There are many disclosure requirements relating to financial instruments, including interest rate risk, credit risk and fair value.

IAS 33 Earnings per Share

The standard applies to enterprises with publicly traded shares (paragraph 1).

Basic earnings per share (EPS) should be calculated using (i) the net profit or loss attributable to ordinary shareholders, and (ii) the weighted average number of ordinary shares outstanding in the period (paragraph 10). The weighted average should be adjusted for all periods presented for events (e.g. bonus issues) that change the number of shares but not the resources (paragraph 20).

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Diluted EPS should adjust earnings and shares for all dilutive potential ordinary shares (paragraph 24).

Presentation of basic and diluted EPS should be on the face of the income statement (paragraph 47).

IAS 34 Interim Financial Reporting

This standard is not mandatory but might be imposed by stock exchange authorities, for example (paragraph 1).

The minimum contents of an interim report should be a condensed income statement, balance sheet, changes in equity, cash flow and notes (paragraph 8). Minimum contents of the statements and the notes are specified (paragraphs 10 and 16). Prior period data should be presented (paragraph 20).

The frequency of reporting should not affect the annual results (paragraph 28). In most ways, the end of a period should be treated as the end of a year (paragraphs 28, 37 and 39).

IAS 35 Discontinuing Operations

A discontinuing operation is a separate distinguishable business that is being sold or abandoned (paragraph 2).

There are no special measurement rules, but the standard requires particular disclosures to begin when there is a binding sale agreement or an announcement of a plan to discontinue (paragraph 16). The disclosures include details of the operation and of revenues, expenses, assets and liabilities, and cash flows attributable to it (paragraph 27). The disclosures can be made by way of note, except that gains and losses on disposal of assets or liabilities should appear as a separate line in the income statement (paragraph 39).

IAS 36 Impairment of Assets

Enterprises are required to check at each balance sheet date whether there are any indications of impairment; several examples are given (paragraphs 8 and 9). When there is an indication of impairment, an enterprise should calculate the asset's recoverable amount, which is the larger of its net selling price and its value in use. The latter is equivalent to the discounted expected net cash inflows, which should be calculated for the smallest group of assets (cash generating unit) for which the calculation is practicable (paragraph 65).

If the asset's recoverable amount is less than its carrying value, an impairment loss must be recognized (paragraph 58). Impairment losses should first be allocated to goodwill (paragraph 88). Impairment losses should be reversed under certain circumstances (paragraphs 102 and 107).

IAS 37 Provisions, Contingent Liabilities and Contingent Assets

A provision is defined as a liability of uncertain timing or amount. A liability, of course, requires there to be an obligation at the balance sheet date (paragraph 10). Provisions should be recognized unless a reliable estimate cannot be made or the possibility of outflow is unlikely (paragraph 14).

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Contingent liabilities (where there is no obligation or where there is no reliable measure or no probability of outflow) should not be recognized as liabilities but disclosed, unless remote (paragraphs 10, 27 and 28). Contingent assets should not be recognized (paragraph 31).

IAS 38 Intangible Assets

Intangible assets should be recognized where it is probable that benefits will flow to the enterprise and cost can be measured reliably (paragraph 19).

Internally generated goodwill must not be capitalized (paragraph 36). Research and many other internally generated intangibles cannot meet the above recognition criteria (paragraphs 42 and 51). Development expenditure might sometimes meet the criteria, and more detailed guidance is given on this (paragraph 45). Costs treated as expenses cannot subsequently be capitalized (paragraph 59).

Intangible assets for which there is an active market can be carried at fair value (paragraph 64).

There is a rebuttable presumption that the useful life of an intangible asset does not exceed 20 years (paragraph 79). Annual impairment tests are required where a life longer than 20 years is used.

IAS 39 Financial Instruments: Recognition and Measurement

All financial assets and liabilities, including derivatives, should be recognized on the balance sheet unless covered by other IASs (paragraphs 1 and 27).

Financial assets should be held at fair value except that the following should be held at cost:

(a) receivables originated by the enterprise and not held for trading;
(b) held-to-maturity investments; and
(c) assets whose fair value cannot be measured reliably (paragraph 69).

Financial liabilities should be held at cost, except that fair value should be used for those held for trading and for derivatives (paragraph 93).

There is an option to treat all financial investments at fair value.

Gains and losses should be recognized in income, except that non-trading items are taken to equity (paragraphs 103 and 104).

Hedge accounting is permitted under certain circumstances for derivatives and (only for foreign currency risks) for other financial instruments. The hedges must be designated and effective (paragraph 142).

IAS 40 Investment Property

Investment property is held to earn rentals or for capital appreciation, rather than being owner-occupied (paragraphs 4 and 5).

Initial measurement should be at cost, and there should be subsequent capitalization of expenditure that improves the originally assessed standard of performance (paragraphs 17 and 22). There should then be an enterprise-wide choice of the fair-value model or the cost model (paragraph 24). Under the first of these, gains and losses are taken to income (paragraph 28). If, under the fair value model, fair value of

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a particular property is not determinable at the beginning, then cost should be used (paragraph 47).

Transfers to owner-occupied property or inventory should take place at fair value (paragraph 54). Transfers to investment property should treat the initial change to fair value as a revaluation under IAS 16 (paragraph 55).

Under the cost model, fair value should be disclosed (paragraph 69).

IAS 41 Agriculture

This standard covers all biological assets to the point of harvest (paragraph 1). Such assets are measured at fair value less point-of-sale costs (paragraph 12). If fair value is not reliably determinable, then cost should be used (paragraph 30).

Agricultural produce is measured at harvest at fair value less point-of-sale costs, which then becomes the cost for inventory accounting (paragraph 13).

Gains and losses on changes in fair value should be taken to income when their conditions are met (paragraph 34).

IFRS 1 First-time Adoption of International Financial Reporting Standards

This standard relates to entities that, for the first time, give an explicit and unreserved statement of compliance with IFRS (paragraph 3). An entity has to prepare (though not publish) an opening balance sheet for the earliest period presented that is in accordance with the standards ruling at the reporting date (paragraph 6). No other versions of standards are relevant. The transitional provisions of standards are not relevant. A few exemptions are allowed, e.g. for business combinations (paragraph 13). A few retrospective estimates are not allowed, e.g. related to hedge accounting (paragraph 26).

A reconciliation is required from accounting under the old rules to the opening IFRS balance sheet (paragraph 39).

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APPENDIX D
Suggested answers to self-assessment questions

Question	*Suggested answer*	*Explanatory notes*[a]
Chapter 2		
2.1	a	
2.2	b	
2.3	d	
2.4	a	
2.5	b	
2.6	b	
2.7	a	
2.8	d	
Chapter 3		
3.1	b	
3.2	c	
3.3	d	
3.4	b	
3.5	b	
3.6	b	
Chapter 4		
4.1	c	
4.2	c	
4.3	c	
4.4	d	
4.5	a	
4.6	a	
4.7	a, b, d	
4.8	c	
Chapter 5		
5.1	c	
5.2	c	
5.3	d	
5.4	d	
5.5	d	
5.6	e	
5.7	b	

[a] Provided only where this seems necessary, particularly for yes/no answers.

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Question	*Suggested answer*	*Explanatory notes*[a]
5.8	c	
5.9	b	
5.10	b	
5.11	a	
Chapter 6		
6.1	b	IAS 1 specifies a number of disclosures, including *how* current and non-current assets should be separated *if* they are to be separated.
6.2	b	The normal production cycle is also relevant, which could be more than 12 months.
6.3	b	
6.4	b	In contrast to IAS 1, and to general practice.
6.5	b	IAS 34 specifies how interim reports should be prepared, *if* they are prepared.
6.6	b	Different formats cannot affect the reported overall results.
6.7	a	
6.8	b	
Chapter 7		
7.1	c	
7.2	a	
7.3	b	
7.4	d	
7.5	d	
7.6	c	
7.7	c	
7.8	a	
7.9	b	This is using the purchases figure, which is usually not available. Using the cost of sales figure would give answer (a).
7.10	b	
7.11	a	
Chapter 8		
8.1	c	
8.2	b	
8.3	c	
8.4	a	
8.5	c	
8.6	d	
8.7	a	
8.8	d	
8.9	d	

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Question	*Suggested answer*	*Explanatory notes*[a]
8.10	b	
8.11	d	
Chapter 9		
9.1	b	It is part of inventory to the farm implement company.
9.2	d	
9.3	c	
9.4	d	
9.5	d	
9.6	c	
9.7	a	
9.8	d	The net book value of a machine is usually a cost-based figure.
9.9	b	
9.10	b	It is the other way round.
9.11	b	
9.12	d	
9.13	d	
9.14	a	
9.15	b	
9.16	c	
9.17	d	
9.18	a	
9.19	b	
9.20	c	
9.21	b	
Chapter 10		
10.1	b	They all give an imputed cost, not an actual purchase price.
10.2	c	
10.3	c	
10.4	c	
10.5	b	
10.6	c	
10.7	b	
10.8	a	
10.9	b	
10.10	a	
Chapter 11		
11.1	a	
11.2	d	
11.3	c	
11.4	b	
11.5	b	

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Question	*Suggested answer*	*Explanatory notes*[a]
11.6	a	
11.7	d	
11.8	b	
11.9	c	
Chapter 12		
12.1	c	
12.2	d	
12.3	c	
12.4	c	
12.5	d	
12.6	a	
12.7	a	
Chapter 13		
13.1	d	
13.2	b	
13.3	d	
13.4	b	They are not required under EU Directives.
13.5	a	
13.6	b	Different interpretations exist.
13.7	b	Both methods must always give identical totals for cash flow from operating activities.
13.8	b	All depreciation effects are eliminated from a cash flow statement.
Chapter 14		
14.1	a	
14.2	b	
14.3	c	
14.4	c	
14.5	b	
14.6	d	
14.7	b	
14.8	c	
14.9	b	
Chapter 15		
15.1	d	
15.2	c	
15.3	c	
15.4	d	
15.5	b	
15.6	a	

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Question	*Suggested answer*	*Explanatory notes*[a]
Chapter 16		
16.1	a	
16.2	b	
16.3	c	
16.4	b	
16.5	b	The measuring unit is made consistent, but the underlying measurement basis is not.
16.6	b	Assuming that no contraction of the business activity takes place, holding gains are *never* logically distributable under the system described.
16.7	a	Deprival value is the *lower* of replacement cost and recoverable amount.
16.8	b	Other entry value bases, such as current replacement cost, also strictly adhere to the matching convention.
Chapter 17		
17.1	c	
17.2	a	
17.3	c	
17.4	c	
17.5	b	
17.6	b	
17.7	b	
17.8	c	
17.9	c	
17.10	c	

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APPENDIX E
Feedback on exercises

Use of exercises

We have attempted to provide a wide variety of exercises without excessive volume or uninteresting repetition. There are different views on the advantages and disadvantages of giving suggested feedback on the exercises in the book. The chapters include a variety of activities with feedback, and the self-assessment questions all have feedback. **Our policy is to give outline feedback here only to the first two exercises for each chapter** (which means four exercises for chapter 3 where the questions are split). Outline feedback on the remaining exercises is available for teachers elsewhere, as described in the Preface.

The exercises examine many of the points made in the chapters themselves, and provide an opportunity to develop the flexible and critical thinking that is so necessary for the understanding of accounting practice. Readers with a particular focus on interpreting financial statements, rather than preparing them, may sensibly omit some of the longer technical exercises.

It is clearly desirable to tackle an exercise thoroughly before looking at our own suggestions. Equally, the feedback given should be regarded as an input into the thinking and the discussion. It should never be regarded as automatically correct, and should never be used to stifle alternative viewpoints.

Chapter 1

1.1 Theoretically, certainly. Financial accounting can provide useful information and therefore lead to more efficient and effective decision making by outside users. However, it is only justified in practice if:

(a) the information is actually useful;
(b) the information is actually used;
(c) the costs of producing and circulating the information do not exceed its benefits.

This may mean that financial reporting to outsiders is more likely to be justified for large companies with many shareholders than for small enterprises where there are only a few owners, who are also the managers.

1.2 Pointers towards the various likely information needs are given in the text (see section 1.1), and significant differences of need or emphasis are suggested there. One solution would be just to provide more and more information, but this leads to acute problems of confusion and misunderstanding (as well as cost). Separate reports for different purposes? A general report ideal for nobody? Note that *managers* are usually considered separately, via management accounting, and that *tax authorities* may use a different set of rules from those for financial accounting.

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Chapter 2

2.1 (a) F's balance sheets (in euros) are as follows:

	31.12.X3 €	*31.12.X4* €
Freehold shop	135,000	135,000
Delivery vans	10,000	10,000
Inventory of goods	32,000	29,000
Amounts owed by customers	35,000	34,000
Cash at bank	19,000	36,000
Cash	500	2,000
	231,500	246,000
Capital	**154,200**	**174,000**
Loans	50,000	50,000
Amounts owed to supplier	26,500	21,250
Wages owed to staff	800	750
	231,500	246,000

The missing item was the **capital** at the relevant date.

(b) For 20X3, the opening capital was €150,000 and the closing capital was €154,200. The increase presumably represents the profit for the year of €4,200. Similarly, for 20X4, the profit would appear to be €174,000–€154,200 = €19,800. Note that the capital figure is cumulative; its total increase from €150,000 to €174,000 represents the combined profits of the two years.

(c) If enterprise F paid €15,000 during 20X3 to the owner, the 31.12.X3 capital figure would be the net figure *after* deducting the dividend paid. This gives (in euros) for 20X3:

$$150{,}000 + \text{profit} - 15{,}000 = 154{,}200$$

The conclusion would therefore be that profits for the year 20X3 must have been €19,200.

(d) In several possible senses the delivery vans could be expected to be less good resources as they become older. It could be argued that some of the original new vans must have been used up during the operations of the two years. This might suggest that the assets figure, particularly for 20X4, is overstated, assuming that no new vans had been purchased. This would mean that the profit figure is also overstated. Think of possible ways of allowing for this, before the problem is considered more formally later.

2.2 Suggested adjustments are shown in the figure below. Alternative answers are not necessarily wrong. For example, consider item (g). Historically, practice here has differed sharply between different countries. In some countries, such as the United Kingdom, it has been normal practice to reduce retained profit by such intended future dividends, adding the figure to creditors, presumably on the grounds that the profit is not intended to be retained, and that a current liability

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exists by intention. However, it can be argued that company G has not yet done anything, merely indicated a future intention. If nothing has been done, and the formal process of 'declaring' the dividend has not yet happened, then no entries should be made, according to International Accounting Standards. In many countries, e.g. Germany, it has long been normal practice not to make any adjustment at all.

		(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*	*(g)*
Shares	50,000							
Retained profit	7,000	+1,200	−400				+300	
Creditors	12,000			−8,000				
	69,000							
Premises	20,000							
Equipment	9,000						−400	
Vehicle	7,000				−7,000			
Inventory	15,500	−2,800						
Debtors	2,500	+1,000				−2,500		
Bank	14,700		−400	−5,000	+7,000	+2,000		
Cash	300	+3,000		−3,000		+500	+700	
	69,000							

Chapter 3

3.1 There is scope for wide differences of view, and considerable debate. For users, comparability seems vital because it relates to the basic decision-making purpose. Faithful representation also reaches the heart of the matter. We suspect that objectivity and prudence are likely to come higher up the 'importance' scale for accountants and auditors than they are up the 'useful' scale. This would lead to discussion of whether the user matters more or the producer matters more!

3.2 This is quite a complicated issue. Terms need to be defined, as in the text, and then explained in commonsense non-technical terms (not so easy). Perhaps the fundamental idea behind the problem here can be highlighted by posing another question: If a uniform accounting treatment is imposed for some particular transaction or type of contract based on its superficial legal form is this:

(a) good, because uniformity automatically leads to comparability; or
(b) bad, because the information given is likely to be irrelevant to the particular situations involved, and therefore the information cannot adequately allow comparison between those situations?

There is clearly scope for discussion here. One conclusion might be that if the substance of transactions is the same, then a uniform approach should be required. This suggests that preparers need mechanisms for identifying the substance.

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3A.1

Rent – 20X1

Cash	100	Dec. 31 Income Statement	400
Cash	100		
Cash	100		
Dec. 31 Balance c/d	100	Dec. 31 Balance b/d	
	400		400
			100

Taxes – 20X1

Jan 1	Balance c/d	80	Dec. 31 Income Statement	350
	Cash	180	Dec. 31 Balance b/d	90
	Cash	180		
		440		440
Dec. 31	Balance c/d	90		

Sections of balance sheet at 31 December 20X1

Current Assets (prepayments)		*Current Liabilities (accrued expenses)*	
Taxes paid in advance	90	Rent owing	100

3A.2

Income statement for the year ended 30 September 20X2

Inventory	4,400	Sales	31,219
Purchases	21,435		
	25,835		
less Inventory	7,200		
Cost of goods sold	18,635		
Gross profit c/d	12,584		
	31,219		31,219
Wages	4,399	gross profit b/d	12,584
Insurance	242	Rents received	500
Light and heat	185		
Sundry expenses	319		
Selling expenses	532		
Net profit	7,407		
	13,084		13,084

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Balance sheet as at 30 September 20X2

Land and buildings	7,700	Capital	12,920
Equipment	1,400	Net profit	7,407
Vehicles	1,500		20,327
Office furniture	2,816		
Inventory	7,200	Bank overdraft	323
Debtors	2,926	Creditors	2,829
Insurance prepayment	32	Wages owing	95
	23,574		23,574

Chapter 4

4.1 There is scope for discussion here, and the background of those discussing the issue is likely to influence opinions. Note that it is necessary to discuss the objectives of financial accounting first, and agreement on this may not be reached. However, if the objective is to provide useful information to large numbers of outside investors in a fast-changing world, there seem to be good arguments for private-sector standard setting. This may fit better in a common law context. Nevertheless, an enforcement mechanism is of great importance, and some government involvement is probably needed here. However, a government regulatory agency (e.g. the SEC in the United States) is compatible with a common law system.

4.2 Here again, opinions may differ. Essentially, arguments for private-sector standards would include factors such as expertise, professionalism, speed and flexibility. Arguments for legal rules would include factors such as precision, and control by the state, which is supposed to democratically represent the people as a whole.

Chapter 5

5.1 The basic thesis is this:

1. In all countries, the government will be interested in the calculation of profit in order to calculate taxable income and prudently distributable profit.
2. Financial reporting rules in a country tend to be driven by large companies because they exercise the greatest influence over the rule makers.
3. In countries with large numbers of listed companies that have large numbers of non-director shareholders, there will be a demand for large quantities of published, audited financial information used for making financial decisions.
4. In these countries, the government's accounting/tax rules will be unsuitable for financial reporting, and so accounting calculations will have to be done twice.
5. In other countries, a few large 'international' companies may volunteer to use non-tax rules for group accounts.

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If, for example, the United Kingdom and the United States are countries as described in point (3) above, whereas Germany and Italy are not, the financial reporting will differ.

5.2 The users are addressed in chapter 1. The beneficiaries from harmonization might be split into (a) users and (b) preparers. Governments might be seen to be users for the purposes of tax collection, but they also might wish to help users and preparers. The same applies to intergovernmental organizations, such as the European Union.

Users include investors and lenders who operate across national borders. These would include institutions, such as banks. Companies, in their capacity as purchasers of shares in other companies or as analysts of suppliers or customers, would also gain from harmonization.

Preparers of multinational financial statements would gain from simplifications, and they would also benefit as users of their own accounting information from various parts of the group. Accountancy firms are sometimes seen as beneficiaries, but at present they gain work as auditors and consultants from the existence of international differences.

In terms of who is doing what to bring about harmonization, the picture is initially confusing, because the greater beneficiaries are seen to be doing little; that is, users are not sufficiently aware or sufficiently organized to address the problem. Preparers are too busy to act because they are trying to cope with – or to take advantage of – all the differences. However, some senior businessmen put public and private pressure on accountants to reduce differences. This is most notable in the case of companies such as the oil company Shell, which is listed on several exchanges and tries to produce one annual report for all purposes.

Governments are nevertheless taking action. For example, the harmonization programme in the EU was active in the 1970s and 1980s. Also, the International Organization of Securities Commissions (IOSCO) is a committee of government agencies that has put considerable backing behind the IASB.

Perhaps the harmonizing body with the highest profile is the IASB, whose predecessor (the IASC) was committee of accountancy bodies that is largely controlled by the auditing professions. Of course, the international differences severely complicate the work of some auditors. However, there is an element of paradox in the fact that auditors are the most active in trying to remove lucrative international differences.

However, the IASC was set up, and is run by, very senior members of the world-wide accountancy profession, who might be seen to be 'statesmen' and to be acting in the public interest and in the interests of the long-run respectability of the profession.

Chapter 6

6.1 The structure of an answer here requires, first, a discussion of what the needs of financial statement users are, as outlined in chapter 1, and, second, an outline of aspects of disclosure as in chapter 6. An argued opinion should follow. Note that your views on the adequacy of disclosure requirements may be influenced by your ranking of user needs, and that your views may change as your studies develop.

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Assuming that sophisticated investors are seen as the main users, it is relevant that the old IASC board contained representatives of the financial analysis profession for many years. From 2001, three of the fourteen board members are selected from this background. This suggests that serious note is taken of their professed needs.

Perhaps, for unsophisticated shareholders, IFRS statements provide an unnecessary amount of data.

6.2 In essence, the two formats highlight different subtotals, total assets for the horizontal format and net assets for the vertical format, and you should consider the differing importance and usefulness of these. Note that it is possible to conclude that the choice of format does not matter much, because users can rearrange the numbers. Note also that, in practice, local law or custom may make the decision for you.

Chapter 7

7.1 The five required ratios for each company are set out in the table below:

	P		*Q*	
gross profit / turnover	9,000 / 45,000	= 20%	8,182 / 40,909	= 20%
net operating profit / turnover	5,000 / 45,000	= 11%	4,091 / 40,909	= 12%
net profit / owners' equity	4,000 / 34,000	= 12%	3,901 / 28,250	= 14%
ROCE	5,000 / 44,000	= 11%	4,901 / 38,250	= 13%
gearing	10,000 / 34,000	= 29%	10,000 / 28,250	= 35%

Although P and Q appear somewhat similar in overall profile, Q shows itself to be more efficient in its operations and use of resources through the second, third and fourth ratios. On the other hand, Q has a higher gearing ratio which would tend to make potential future lenders slightly more wary of Q than of P, other things being equal.

7.2

	20X1 (€000)		*20X2 (€000)*	
Workings:				
Turnover (T)	541		675	
less Cost of sales	369		481	
Gross profit (GP)	172	(derived)	194	(derived)

(*Continued*)

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	20X1 (€000)		20X2 (€000)	
GP/T	(172 × 100)/541 = 31.8%		(194 × 100)/675 = 28.7%	
Closing reserves	53		82	
Dividends proposed	20		30	
	73		112	
less Opening reserves	21		53	
Net profit (NP)	52	(derived)	59	(derived)
NP/T	(52 × 100)/541 = 9.6%		(59 × 100)/675 = 8.7%	
T/NAE	541/303 = 1.8 ×		675/432 = 1.6 ×	
NP/NAE	(52 × 100)/303 = 17.2%		(59 × 100)/432 = 13.7%	
CA/CL	188/92 : 1 = 2.0 : 1		269/162 : 1 = 1.7 : 1	
QA/CL	102/92 : 1 = 1.1 : 1		92/162 : 1 = 0.6 : 1	

GP/T The deterioration could be due to a rise in purchase prices not passed on in increased selling prices and/or a change in sales mix, etc.

NP/T Roughly in line with the decline in GP/T, it could also be caused by high administration and/or sales expenses.

T/NAE The full-year effect of the increased investment has not yet materialized. In addition, year-end inventories have doubled, possibly indicating a build-up for a promotional drive.

NP/NAE The decline is attributable to the combined effects of the two preceding ratios.

CA/CL Working capital has increased, notably due to inventory and debtors. The inventory build-up, partly financed by an increase in creditors, has been noted above and this may be coupled with a planned (or lax) credit control.

QA/CL The increased investment has produced a liquidity problem.

Chapter 8

8.1 See text (sections 2.2 and 8.1), but avoid the unthinking use of technical phrases and formal definitions. Remember that it would be possible to define the terms differently from the IASB's definitions. Also, remember that not all elements meet the criteria for recognition in financial statements.

8.2 (a) No, traditional financial accounting based on the historical cost convention does not make the going concern convention unnecessary. Indeed, traditional and current practice rely heavily on the going concern convention. Inventory is evaluated on the assumption that it will eventually be sold in the ordinary course of business. Fixed assets are depreciated over their estimated useful lives to the business, and this requires the assumption that the business will continue to operate over the period of those lives. Prepayments assume that the firm will operate and use the service acquired, for the whole basis of the accruals convention is that the business is a continuing operation. The going concern convention is, therefore, crucial to current accounting practice even though that practice is based on the historical cost convention.

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(b) The reason why a shareholder needs a report at all is to use the report to influence some future action or decision. If this is not so, then the shareholder has no important use for the report, whatever its contents. However, the above does not strictly answer the question. The shareholder may well find a report on past events extremely useful as a guide to predicting future outcomes and future trends. Equally, however, the shareholder may find management's estimate of future events to be directly useful. Perhaps the short answer to the question, is 'both'!

Chapter 9

9.1 A fixed asset may be distinguished from other types of asset insofar as it has all of the following characteristics:

- it is intended to be held by an entity for use in the production or supply of goods and services on a continuing basis;
- it is intended to have a life of more than one accounting period;
- it is not intended for sale in the ordinary course of business.

In a full answer, all these points could be illustrated.

9.2 The proposition as stated is certainly defensible. On the other hand it could be suggested that:

(a) past information can be relevant if it improves the quality of estimates about the future;
(b) management cannot be allowed to produce its own estimates because they might introduce biases, and accountants must therefore seek to confine themselves as far as possible to 'facts'.

Of course, even conventional accounting has large amounts of 'future' in it. For example, the definitions of 'asset' and 'liability' involve expectations. Also, estimates of the future are needed in order to measure change in, for example:

- receivables (expected receipts);
- depreciation (expected lives of assets);
- pension liabilities (expected lives and future pay levels of employees – see chapter 11).

Chapter 10

10.1 The inventory figure for production cost of manufactured items can certainly never be reliable in the sense that it involved no estimates. However, it can be precisely determined and precisely calculated, once the necessary arbitrary assumptions about overhead behaviour have been made. Such precision could be seen as improving comparability, and therefore relevance.

10.2 (a) **Violas**. Since the inventory is reduced to nil by 30 September, profits under all historical cost assumptions will be the same, as differences in calculated profit arise only because of different assumptions about usage. Thus we have a unified result for requirements (i)–(iii):

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	€
Sales	2,700
Cost of sales	1,750
Gross profit	950
Value of closing inventory	250

(iv) However, under replacement cost:

		€	€
Sales			2,700
Cost of sales	31 March	400	
	30 June	350	
	30 September	1,500	
			1,650
Operating profit			1,050
Holding loss realized	1 April	50	
	30 November	50	
			100
Gross profit			950

Cellos

(i) FIFO

	€	€
Sales		3,200
Purchases	3,600	
Closing inventory		
(1 @ 800)		
(1 @ 900)	1,700	1,900
Gross profit		1,300

(ii) LIFO

	€	€
Sales		3,200
Purchases	3,600	
Closing inventory		
(1 @ 600)		
(1 @ 900)	1,500	2,100
Gross profit		1,100

(iii) Weighted average calculation:

Inventory to 30 June:		
2 @ 600	=	1,200
1 @ 700	=	700
3		1,900

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30 June weighted average = 633 (i.e. 1,900 ÷ 3)

2 @ 633	=	1,266
1 @ 800	=	800
3		2,066

30 September weighted average = 689 (i.e. 2,066 ÷ 3)

1 @ 689	=	689	
1 @ 900	=	900	
2		1,589	(closing inventory)

	€
Sales	3,200
Cost of sales	
1 @ 633	
2 @ 689	2,011
Gross profit	1,189

(iv) Replacement cost calculation:

As at 30 June: replacement cost of inventory	= 3 × 700	=	2,100
Profit on sale		=	300
Holding gains		=	200
As at 30 September: replacement cost of inventory	= 3 × 800	=	2,400
Profit on sale		=	600
Holding gains		=	200
As at 30 November: replacement cost of inventory	= 2 × 900	=	1,800
Holding gain		=	100
Total operating profit		=	900
Total holding gains		=	500

(b) In relation to the various methods:

(i) FIFO seems to produce more up-to-date costs in the balance sheet;
(ii) LIFO seems to produce more up-to-date expense figures in the income calculation;
(iii) the weighted average method achieves neither of the above, or a bit of both, depending on your attitude;
(iv) the use of replacement cost achieves both, at the cost of more complexity and more subjectivity if actual replacement costs are used (rather than the price of the most recent purchase).

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Chapter 11

11.1 This should cause a bit of thought. What about depreciation provisions and provisions for possible bad debts? These are likely to be shown as deductions on the asset side of the balance sheet, because they might better be described as 'allowances' or 'value adjustments'. However, what about receipts for sales already received where the sale has not yet been made? Presumably, these could be seen as amounts owing to customers. Furthermore, a problem occurs with the treatment of government grants received in relation to assets. These are often shown as 'deferred income', which is presented outside equity. This treatment seems doubtful, but the topic is beyond the scope of this book.

11.2 The point is that, if provisions are overstated, then expenses and liabilities are too large. This makes profit (and therefore reserves) too small. This can be called the creation of secret reserves. The point is almost certainly overstated in the question, but the general direction of the argument is surely correct. Human attitude will always be a factor, but 'whim' can be influenced and perhaps controlled by the creation of professional norms and practices. Some would argue that legal or centrally inspired accounting plans can remove the human element, but others might reply that such plans are purely arbitrary and are indeed themselves created by human whim. There is scope for debate here!

Chapter 12

12.1 Of course, tax regulations in any country are likely to affect the economic behaviour of managers. This would be reflected in the accounts. However, let us assume that the question refers to a more direct effect of tax on accounting practices.

One would expect major influence in countries where accounting rules must follow tax rules or where they tend to follow tax rules (because of the absence of accounting rules on a particular issue or because of the need to establish deductibility for tax purposes or to avoid taxable gains). This issue is addressed in chapter 5 of the text.

It is clear that the effect of tax on asset valuation provisions and depreciation is larger in Germany than it is in the United Kingdom, for example. In general, in many continental European countries, because tax calculations are based closely on accounting numbers, tax minimization involves avoiding upward valuations, maximizing depreciation within the tax limits, seeking ways of writing down assets, and increasing provisions. To a large extent, such activities would have little effect on tax liabilities in the United Kingdom or the United States. Furthermore, companies in capital-market countries would be wary of the potential commercial disadvantages of making their financial statements look less attractive.

In principle, it ought to be possible to relieve the group accounts from some of these pressures, because such statements are not relevant for tax purposes in most countries. The EU Seventh Directive allows group accounts to use different rules from parent accounts. In 1998, laws were passed in Germany and several other countries enabling the use of international standards in consolidated statements, and this became compulsory for EU listed companies for 2005 onwards.

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12.2

Year	*1*	*2*	*3*	*4*
Tax balances				
Asset balance 1 January	7,000	9,600	12,480	15,584
Additions	5,000	6,000	7,000	—
Depreciation (20%)	2,400	3,120	3,896	3,117
Balance 31 December	9,600	12,480	15,584	12,467
Accounting balance				
31 December (as question)	13,500	17,550	22,095	19,885
Temporary difference	3,900	5,070	6,511	7,418
Deferred tax liability	1,170	1,521	1,302	1,484
Effect on income statement		−351	+219	−182

Chapter 13

13.1 The statement that expenses and revenues are subjective is in general correct, although there can be very large variations in degree of subjectivity. For example, the wages expense is not very subjective but the depreciation expense is. Whilst past cash flows are facts in the sense that they have demonstrably happened, their timing – and, indeed, their existence – can be manipulated by management. For example, management could make cash flow look good by:

(a) postponing the purchase of necessary fixed assets;
(b) selling fixed assets that are needed;
(c) selling valuable investments that had originally been intended to be held for the long term;
(d) borrowing money just before the year end and paying it back just after;
(e) postponing all payments in the last month of the year until the first day of next year.

The implications for trend considerations of such manipulation could be considerable.

13.2 Overall, the group is in a strong cash position. The net cash from operating activities is large. Note 33 indicates that reported profit in 2001 and 2002 was significantly affected by impairment charges, which are variable and unpredictable, but since these are non-cash items they have no effect on cash inflows. The net outflows relating to investing activities, and the dividends paid, are more than comfortably paid for out of the operating cash flows. The need to raise debt is therefore minimal, and the balance of cash and cash equivalents is increasing steadily and significantly each year.

Perhaps a key issue is what Nokia intend to do with all this money.

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Chapter 14

14.1 See text, but briefly:

(a) a subsidiary implies control through shareholding or dominant influence;
(b) a joint venture implies joint control by two or more parties;
(c) an associate implies significant influence, without control or dominant influence;
(d) an investment in shares implies a relatively passive role, with no significant influence.

With a subsidiary, the usual approach is consolidation, including complete combination of individual enterprise accounting statements, with the necessary recognition of minority interests. With an associate, the usual approach is equity accounting, where the investment figure is increased by the appropriate proportion of the success of the associate, i.e. in effect a one-line proportional consolidation. With a joint venture, equity accounting is common, but so is line-by-line proportional consolidation. With an investment in shares, no benefits are taken in the consolidated accounts except for dividends.

Note that there may be practical difficulties of differentiation that underlie the above apparently straightforward distinctions.

14.2 **Consolidated balance sheet as at 30.6.X2**

	€000
Assets	
Goodwill (Note 1)	50
Land and plant	1,200
Inventory (1,000 – 10)	990
Debtors (240 – 2)	238
	2,478
Liabilities	
Creditors (46 – 2)	44
	2,434
Represented by	
Ordinary €1 shares	1,000
Reserves (Note 2)	1,280.5
	2,280.5
Minority interest (Note 3)	153.5
	2,434

Note 1	€	€
Cost of investment in B		275
less ordinary shares acquired	75	
reserves acquired 75% × 200	150	225
Goodwill on acquisition		50

Note 2	
Reserves A	1,045
Reserves since acquisition of B	
75% (524 – 10 – 200)	235.5
	1,280.5

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Consolidated balance sheet as at 30.6.X2 (*continued*)		
Note 3	€	€
Minority interest		
25% ordinary shares		25
25% reserves = 25% × 514		128.5
		153.5

Chapter 15

15.1 (a)

Loan–Debtor

	€		€
Year 1	10,000	Loss on loan	500
		Balance c/d	9,500
	10,000		10,000
Year 2 balance b/d	9,500		
Gain	1,000	Balance c/d	10,500
	10,500		10,500
Year 3 balance b/d	10,500	Cash	10,600
Gain	100		
	10,600		10,600

(b) The transactions would be handled thus:

- Year 1, loss of €500 taken to income statement.
- Year 2, gain of €1,000 taken to income statement.
- Year 3, gain of €100 taken to income statement.

The year 1 treatment is supported by both matching and prudence.

The year 2 treatment proposed here is much more debatable. It is supported by the matching convention and also by the consistency convention, but it clearly goes against prudence. A middle approach would be to take €500 of the year 2 gain to the income statement (to reverse the loss in year 1) and to take the remaining €500 to reserves. Different approaches are allowed in different countries, and they can all be both defended and criticized. The IASB would require the treatment suggested in the bullet points above.

The year 3 treatment is surely generally acceptable, because the whole thing is now history. The gain is fully realized under any criteria.

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15.2 (a) *Closing rate method*

Income statement for year to 31 December 20X0

	Rate of exchange	*FC*
Net profit	2	150
Taxation	2	75
		75
Dividend	2	30
		45

Balance sheet as at 31 December 20X0

	Rate of exchange	*FC*	*FC*
Fixed assets	2		185
Inventory	2	180	
Debtors	2	120	
		300	
Creditors	2	120	180
			345
Ordinary share capital	3		200
Retained profits (from above)			45
Reserves – exchange difference			100
			345

(b) *Temporal rate method*

Income statement for year 31 December 20X0

	Rate of exchange	*FC*	*FC*
Sales	2.5		600
Opening inventory	3	80	
Purchases	2.5	480	
		560	
Closing inventory	2	180	380
			220
Depreciation	3		40
			180
Taxation	2		75
			105
Dividends	2		30
			75
Gain on exchange (from balance sheet)			15
			90

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Balance sheet as at 31 December 20X0

	Rate of exchange	*FC*	*FC*
Fixed assets	3		110
Inventory	2	180	
Debtors	2	120	
		300	
Creditors	2	120	180
			290
Ordinary share capital	3		200
Retained profits (75 + balance 15)			90
			290

Chapter 16

16.1 (a) *Historical cost accounting*

Income statements for the years:	20X0	20X1
	€	€
Sales	3,000	3,600
Cost of sales	(2,000)	(2,000)
Gross profit	1,000	1,600
Expenses (rent)	(600)	(700)
Net profit	400	900
Tax	(200)	(450)
Retained profit	200	450

Balance sheets at year ends:	20X0		20X1
Inventory	€		€
@ 1,000 (4)	4,000	(2)	2,000
@ 1,200 (2)	2,400	(2)	2,400
@ 1,400 (0)	0	(2)	2,800
	6,400		7,200
Cash	3,800		3,450
	10,200		10,650
Capital	10,000		10,000
Retained profits	200		650
	10,200		10,650

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(b) *Replacement cost accounting*

Income statements for the years:	20X0		20X1
	€		€
Sales	3,000		3,600
Cost of sales	(2,200)		(2,600)
Gross profit	800		1,000
Expenses (rent)	(600)		(700)
Operating profit	200		300
Tax paid	(200)		(450)
Current cost profit/(loss)	0		(150)
Realized holding gain (2 × 100)	200	(2 × 300)	600
Historical cost profit	200		450

Balance sheets at year ends:	20X0		20X1
Inventory	€		€
@ 1,300 (6)	7,800	(0)	0
@ 1,400 (0)	0	(6)	8,400
Cash	3,800		3,450
	11,600		11,850
Capital	10,000		10,000
Realized holding gain	200		800
Distributable profits	0		(150)
Unrealized holding gain	1,400		1,200
	11,600		11,850

(c) The figures show that, given an intention to continue the operations of the business at the current level, the historical cost profit figure is misleading. Indeed, in the second year the business has an operating loss on the replacement cost basis.

16.2 **Duck Co. balance sheet as at 31 December 20X0**

			€				€
Fixed assets:			12,600	Shareholders' interest:			
less Depreciation			1,260	Shares			10,000
			11,340				
Current assets:				Profit			(20)
Inventory		4,000		Holding gains		3,600	
Cash	10,000					950	4,550
	8,000						14,530
	47,900			Loan			8,000
	(9,000)			Current liabilities:			
	(35,550)			Creditors			960
	(13,200)	8,150	12,150				
			23,490				23,490

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Income statement for the year to 31 December 20X1

		€			€
Purchases	8,000		Sales	7,200	
	8,250			10,800	
	8,500			15,600	
	10,800	35,550		14,300	47,900
Holding gains		950			
		36,500			
Closing inventory (40 × 100)		4,000			
		32,500			
Gross profit c/d		15,400			
		47,900			47,900
General expenses		13,200	Gross profit b/d		15,400
Loan interest		960			
Depreciation		1,260	Net loss c/d		20
		15,420			15,420

Inventory holding gains are calculated as follows:

1 March	100 – 60	= 40 × (–5)	= (200)
1 June	210 – 150	= 60 × 10	= 600
1 September	310 – 280	= 30 × 5	= 150
1 December	430 – 390	= 40 × 10	= 400
			950

Holding gains are those gains, or credit balances, caused by increases in the recorded figures of resources over the period during which they are held by a business. They cause an increase in the ownership claims on the business, but have not arisen as the result of a transaction.

Whether or not any particular holding gains are to be regarded as distributable is a function of the capital maintenance assumption adopted. As discussed in the text of the chapter, the numerical increase in resources represented by the holding gain will need to be used in the replacement of the original resources once they have been used. If, therefore, the capital maintenance concept being used is the maintenance of the current operating capability of the business, then the holding gains are not available for distribution as dividend. Note that this logic follows whether or not the holding gains are ‘realized’ through the sale of the original resource.

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Chapter 17

17.1 (a)

	Year 2	*Year 1*
Historical cost basis		
$\frac{\text{operating profit}}{\text{owners' equity}}$	$\frac{1,383}{3,819} = 36\%$	$\frac{1,207}{3,074} = 39\%$
$\frac{\text{net profit}}{\text{owners' equity}}$	$\frac{1,380}{3,819} = 36\%$	$\frac{622}{3,074} = 20\%$
gearing	$\frac{3,819}{9,694} = 39\%$	$\frac{3,074}{8,346} = 37\%$
Current value basis		
$\frac{\text{operating profit}}{\text{owners' equity}}$	$\frac{1,288}{4,375} = 29\%$	$\frac{1,037}{3,790} = 27\%$
$\frac{\text{net profit}}{\text{owners' equity}}$	$\frac{1,320}{4,375} = 30\%$	$\frac{502}{3,790} = 13\%$
gearing	$\frac{4,375}{10,550} = 41\%$	$\frac{3,790}{9,235} = 41\%$

(b) It can be argued that the current value figures give a truer economic comparison than other currently available alternatives. For two of the three ratios, the trends – perhaps more useful than the absolute amounts – are different. From Year 1 to Year 2, operating profit to owners' equity falls on a historical cost basis and rises on a current value basis. Gearing worsens on a historical cost basis and stays constant on a current value basis. Note also, as an aside but as a point of major significance, the effects of the extraordinary items in the two years. Their existence tends to suggest that the operating profit ratio is a much better long-term indicator than the net profit ratio. This makes the difference in trend direction for the operating profit ratio under the two bases all the more significant. Perhaps a much longer time series is needed.

17.2 (a) Nine ratios are readily available:

	A	*B*
Gearing	$\frac{100}{200} = 50\%$	$\frac{130}{650} = 20\%$
Working capital	$\frac{180}{160} = 9.8\%$	$\frac{200}{120} = 5.3\%$
Quick assets	$\frac{100}{160} = 62\%$	$\frac{100}{120} = 83\%$
ROE	$\frac{30}{100} = 30\%$	$\frac{100}{520} = 19\%$
ROCE	$\frac{30 + 10}{200} = 20\%$	$\frac{100 + 13}{650} = 17\%$

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	A	B
$\frac{\text{Gross profit}}{\text{sales}}$	$\frac{600}{1{,}000} = 60\%$	$\frac{1{,}000}{3{,}000} = 33\%$
$\frac{\text{Net profit}}{\text{sales}}$	$\frac{30}{1{,}000} = 3\%$	$\frac{100}{3{,}000} = 3\%$
$\frac{\text{Debtors} \times 365}{\text{sales}}$	$\frac{100 \times 365}{1{,}000} = 36$ days	$\frac{90 \times 365}{3{,}000} = 11$ days
$\frac{\text{Creditors} \times 365}{\text{Cost of sales}}$	$\frac{110 \times 365}{400} = 100$ days	$\frac{120 \times 365}{2{,}000} = 22$ days

(b) Although A and B have very similar net profit to sales percentages, they reach this point in different ways. A has a high gross profit percentage (lower turnover, higher margin) and a higher ROCE. Its materially higher gearing ratio turns this slightly higher ROCE into a considerably higher ROE. From a shareholder viewpoint, most of this makes A sound preferable to B. But it should be remembered that B has more 'slack' in its structure. A lender might well feel happier granting further loans to B, because it has a lower gearing ratio and better liquidity ratios. A's debtors' payback and – particularly, and, worryingly – creditors' payback periods are much higher.

It must be noted that B's balance sheet includes a large revaluation of its land. This is a major inconsistency and distorts the figures considerably. In terms of return on original investments, ROE and ROCE for B are considerably understated. Perhaps more usefully in terms of return on current value invested, ROE and ROCE for A are overstated.

Chapter 18

18.1 The essential points regarding items (b), (c), (f) and (h) are covered in the feedback to Activity 18.C. Item (g) arises because of different policies regarding valuation of marketable securities. Certain securities, classified as trading or as available for sale, are recorded at fair value under US GAAP, whereas they are recorded at historical cost under German GAAP. The increases for the two types of security to give fair value are recorded as income, or directly in shareholders' equity. Therefore the cumulative increase needs to be added to shareholders' equity under German GAAP to arrive at shareholders' equity under US GAAP.

Item (k) is very straightforward. Minority interest is included in shareholders' equity under German GAAP, but needs to be removed in calculating shareholders' equity under US GAAP. (It will of course be shown separately elsewhere.)

Such explanations, in your own words, of what can be quite complicated situations, represent a skill worth practising.

18.2 Now you are on your own. It isn't easy, but it is what real-life international accounting is all about!

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