16

Interpretation of Financial Statements

Interpretation of Financial Statements 16

Learning Outcomes

After studying this chapter students should be able to:

- Interpret a full range of accounting ratios;
- analyse financial statements in the context of information provided in the accounts and corporate report;
- evaluate performance and position based on analysis of financial statements;
- discuss segemental analysis, with inter-firm and international comparisons taking account of possible aggressive or unusual accounting policies and pressures on ethical behaviour;
- discuss the results of an analysis of financial statements and its limitations.

16.1 Introduction

This chapter extends the range of techniques covered by Chapter 14 in looking at horizontal, vertical and common size analysis in Section 16.2. Section 16.3 examines the provisions of IFRS 8 *Operating Segments*. Section 16.4 examines the limitations that are inherent in financial statements themselves. Section 16.5 looks at a closely related issue: the limits to the use of ratio analysis in practice. Section 16.6 is concerned with the need to be aware of aggressive or unusual accounting policies that may be employed by preparers in some circumstances to alter the appearance of the financial statements: the problem of creative accounting. Section 16.7 examines some of the particular problems associated with the reporting of financial obligations.

16.2 Horizontal, vertical and common size analysis

16.2.1 Horizontal analysis

Where at least 2 years' worth of information is available, it is possible to conduct a horizontal analysis of the figures. This involves tracking and explaining, as far as possible, the changes between the two sets of figures, for example, making an observation that sales have increased by more than the rate of inflation applicable to the industry.

Where several years' information is available it is possible to conduct an analysis of trends over time. Some entities provide 5- or 10-year summaries of the key figures in their financial statements and where this information is available a trend analysis can offer some interesting insights into the development of the business. The following example illustrates the technique:

Example 16.A

XY produces a 5-year summary in its annual financial statements. The financial statements for the year ended 31 March 20X7 show the following key figures extracted from the income statement:

	20X7	*20X6*	*20X5*	*20X4*	*20X3*
	$m	$m	$m	$m	$m
Revenue	2,619.7	2,381.4	2,371.5	2,347.7	2,522.9
Operating profit	324.5	298.6	277.7	334.6	372.4
Interest costs	102.6	74.4	73.0	62.1	21.0

The annual report details make it clear that sales of XY's principal product is under threat from new entrants to the market. Heavy investment in intangible assets has been required in order to maintain market share.

Before rushing into calculations it is always sensible to start with a brief scrutiny of the figures to establish a factual base on which to build the analysis. From the limited set of figures given above, we can see that revenue has increased each year since 20X4, but that the 20X4 figure represented quite a significant drop on the figure reported in 20X3. Operating profit reached a low point in 20X5 but has picked up since, although it is still not at 20X3/4 levels. This suggests that the business's margins have been squeezed, probably by competition, and/or that it is struggling to maintain control over costs. Interest costs have increased, with big increases between 20X3/4 and between 20X6/7.

It is quite possible to discern all of these points from the data without touching a calculator, and the analysis above could form quite a reasonable introductory paragraph to a report to an investor.

A few calculations will help to extend the analysis further. We can calculate the percentage rate of increase/decrease over the years, as follows:

Annual percentage increases/(decreases) in a range of key figures for XY – 20X3 to 20X7

	20X7	20X6	20X5	20X4
	%	%	%	%
Revenue	10.0	0.4	1.0	(6.9)
Operating profit	8.7	7.5	(17.0)	(10.0)
Interest cost	37.9	1.9	17.6	295.7

The horizontal analysis reinforces the point that revenue dropped significantly between 20X3 and 20X4, and that it has finally started to make a significant recovery in 20X7. The increase in 20X7 may be related directly to additional investment financed by borrowing. Operating profit performance overall looks even worse than sales performance. The figures appear to support the message picked up from elsewhere in the annual report, that the business faces a difficult competitive environment, and that it has had to invest quite heavily to maintain market share.

So, provided with 15 different figures in three categories of income statement item, we have been able to identify some quite important trends, and we have the makings of a credible report on the business for an interested party. Of course, a limited range of figures like this does not tell us everything we need to know.

Questions prompted by the analysis might include the following:

- How much has been borrowed, and what are the terms (e.g., interest rates, security provided, repayment conditions)?
- What is the nature of the investment in non-current assets? What kind of intangibles has the business invested in?
- Is there some information about costs that will allow us to see if the business has lost control over certain categories?
- Is the business performing better in some markets than in others?

The financial statements should provide some information on all of these matters. Whether or not it's sufficient information to provide comprehensive answers is another matter.
There are some problems with horizontal analysis that should be borne in mind:

- Lack of comparability because of changes in the business. Many large businesses choose to grow through acquisitions. Where there is a significant degree of mergers and acquisition activity, it can be difficult to identify true underlying trends.
- Lack of comparability because of accounting policy changes and changes in financial reporting standards. Sometimes, when presenting several years' worth of data, businesses will adjust the figures so that they are all presented in accordance with its current accounting policies and currently valid financial reporting standards. This is, obviously, helpful to the analyst. However, notes should be read very carefully to see whether or not such adjustments have been made.
- Failure to take the effects of changing price levels into account. Usually, no adjustment is made, year on year, to take changing price levels into account. However, even at a low rate of inflation in the economy, the effects of price changes can be quite substantial over several years. In the example of XY above, it is quite likely that the very small increases in revenue in 20X5 and 20X6 were decreases in real terms, if price inflation were taken into account.

16.2.2 Vertical analysis

Vertical analysis is a simple, but potentially effective technique, that involves expressing each figure in a primary financial statement as a percentage of one key figure.

Example 16.B

BB has the following summarised income statement for 20X5:

	20X5
	$'000
Revenue	1,377
Cost of sales	(897)
Gross profit	480
Distribution costs	(247)
Administration expenses	(152)
Profit before tax	81

Taking the key figure of revenue as 100%, the statement can be vertically analysed as follows:

	20X5	*20X5*
	$'000	%
Revenue	1,377	100
Cost of sales	(897)	(65)
Gross profit	480	35
Distribution costs	(247)	(18)
Administration expenses	(152)	(11)
Profit before tax	81	6

On its own this analysis is not perhaps very helpful: it requires some kind of comparison which will attribute meaning. If the data is available we can extend it over several periods in the form of common size analysis. Note that it is usual to express figures in the income statement in relation to sales. Statement of financial position figures would normally be expressed in relation to total assets.

16.2.3 Common size analysis

Common size analysis extends across several periods. Vertical common size analysis involves the type of calculation shown in Example 16.B but for the data from several accounting periods.

It is also possible to use a horizontal approach to common size analysis: a particular year is recognised as the base year and each component is assigned a value of 100 per cent. The amount of the component for each subsequent year is expressed as a percentage of the base year.

Example 16.C

Extending the example of BB above: the following data is provided for the years 20X2 to 20X5:

BB: income statements

	20X5	*20X4*	*20X3*	*20X2*
	$'000	$'000	$'000	$'000
Revenue	1,377	1,269	1,109	1,100
Cost of sales	(897)	(844)	(789)	(750)
Gross profit	480	425	320	350
Distribution costs	(247)	(225)	(210)	(199)
Administration expenses	(152)	(103)	(85)	(100)
Profit before tax	81	97	25	51

The income statement data can be common-sized vertically in relation to sales as follows:

	20X5	*20X4*	*20X3*	*20X2*
	%	%	%	%
Revenue	100	100	100	100
Cost of sales	(65)	(67)	(71)	(68)
Gross profit	35	33	29	32
Distribution costs	(18)	(18)	(19)	(18)
Administration expenses	(11)	(8)	(8)	(9)
Profit before tax	6	7	2	5

Some of the income statement data can be common-sized horizontally using 20X2 as a base year:

	20X5	*20X4*	*20X3*	*20X2*
	%	%	%	%
Revenue	125	115	100	100
Profit before tax	159	190	49	100

From this limited analysis we have an overall view and we can see that sales have increased by 25% over the period but that profits have fluctuated. The vertical common size analysis shows that gross profit margin has increased, distribution costs have remained more or less the same in relation to sales revenue, and that there has been a sharp increase in administration expenses in the most recent year. We can now investigate further using other techniques.

BB's statement of financial position data for the same accounting periods is as follows:

BB: Statements of financial position

	20X5 $'000	20X4 $'000	20X3 $'000	20X2 $'000
Non-current assets				
Buildings	756	744	732	720
Plant	452	460	430	410
Other	69	38	30	–
	1,277	1,242	1,192	1,130
Current assets				
Inventory	267	262	296	309
Receivables	174	167	145	130
Cash	102	82	107	160
Total assets	1,820	1,753	1,740	1,729
Share capital	100	100	100	100
Retained earnings	1,492	1,440	1,420	1,383
	1,592	1,540	1,520	1,483
Current liabilities	228	213	220	246
	1,820	1,753	1,740	1,729

BB's statement of financial position can be common-sized vertically in relation to total assets as follows:

	20X5 %	*20X4* %	*20X3* %	*20X2* %
Non-current assets				
Buildings	41	42	42	42
Plant	25	26	25	24
Other	4	2	2	–
Current assets				
Inventory	15	15	17	18
Receivables	9	10	8	7
Cash	6	5	6	9
Total assets	100	100	100	100

Some of the statement of financial position data can be common-sized horizontally, using 20X2 as a base year:

	20X5 %	*20X4* %	*20X3* %	*20X2* %
Plant	110	112	105	100
Inventory	86	85	96	100
Total assets	105	101	101	100

From this limited analysis we can see that, while total assets have increased only slowly over the period, there have been larger fluctuations in inventory value (which has fallen) and plant (which has increased at a faster rate than total assets).

The common-size data forms a basis for further analysis, which is likely to incorporate some of the ratio calculations explained in Chapter 14.

16.3 Segment analysis

Many business organisations have developed into very large multinational corporations whose economic significance is substantial. As we have seen in the early chapters of this *Learning System*, groups of companies produce consolidated financial statements. These draw together the results of business that may be engaged in quite disparate activities. The advantage of such statements is that they allow the user to appreciate the financial results and position of the group as a whole. However, in the process of consolidation a great deal of detail is lost that would potentially be of great assistance to users.

Users of financial statements need sufficient information to allow them to understand how the individual segments of the business contribute to its overall performance and financial position.

16.3.1 IFRS 8 *Operating Segments*

This financial reporting standard was issued in November 2006, and was effective in respect of accounting periods beginning on or after 1 January 2008. The new IFRS replaced the existing standard IAS 14 *Segment Reporting*. The principal reason for issuing a new standard in this area was to achieve convergence with US GAAP. In this instance convergence was achieved by adopting many aspects of US SFAS 131 *Disclosures about Segments of an Enterprise and Related Information*. IFRS 8 has been subject to a degree of criticism in some quarters (and especially within the European Union) because the IASB is seen as having uncritically adopted US regulation, and also because there are, it is argued, flaws in the new standard. These will be identified and discussed below.

The principal requirements of IFRS 8 are as follows:

Scope

The scope of IFRS 8 is limited to those entities whose debt or equity instruments are traded on a public market.

Definition of an operating segment

Quoting directly from the standard:

'An operating segment is a component of an entity:

(a) that engages in business activities from which it may earn revenues and incur expenses (including revenue and expenses relating to transactions with other components of the same entity),
(b) whose operating results are regularly reviewed by the entity's chief operating decision maker to make decisions about resources to be allocated to the segment and assess its performance, and
(c) for which discrete financial information is available.'

This description therefore excludes those parts of a business that do not engage directly in business activities, such as head office functions. However, it does include business segments whose activities are principally concerned with trading intra-group.

One of the criticisms of IFRS 8 is that it allows an entity's managers to determine what is a reportable segment. Managers therefore are potentially able to conceal information by judicious selection of segments. A further, related, criticism is that comparability of segment information between businesses suffers because segment identification is likely to differ between businesses. However, it should be recognised that comparability between businesses is often problematic, and users should in any case be very cautious when comparing entities even if they appear, superficially, to be quite similar in their operations.

Criteria for reporting segment results

IFRS 8 sets quantitative thresholds for reporting. Entities should report information about an operating segment that meets any one of three quantitative thresholds:

1. Segment reported revenue (including both intra-group and external sales) exceeds 10% of the combined revenue of all operating segments.
2. Segment profit or loss is 10% of the greater of (i) the combined reported profit of all operating segments that did not report a loss; and (ii) the combined reported loss of all operating segments that reported a loss.
3. Segment assets exceed 10% of the combined assets of all operating segments.

The revenue of the disclosed operating segments that meet the criteria should equal at least 75% of total revenue of the entity. If this threshold is not met, additional operating segments should be disclosed until at least 75% of reported revenue is included in operating segments.

Reporting of comparatives

As with other financial information included in the annual report of an entity, segment disclosures should include comparatives for the previous year. It is possible that an operating segment could meet the reporting criteria in 1 year but not in another. Where a segment ceases to meet the reporting criteria information about it should continue to be disclosed provided that management judge it to be of continuing significance. Conversely, where a segment is newly identified and reported because it meets the reporting criteria for the first time, the previous year's comparatives should be reported for it, even though the segment was not significant in the prior period.

Disclosure requirements

General information about operating segments must be disclosed as follows:

1. The factors used to identify the reportable segments, including the basis on which they have been identified – for example, geographical areas, types of product or service.
2. The types of product or services from which each reportable segment derives its revenues.

The entity must disclose for each segment measures of profit or loss AND total assets. The extent of other disclosures depends to some extent on the nature and content of information that is reviewed by the 'chief operating decision maker' (probably the CEO or equivalent). A measure of liabilities must be disclosed for each segment if that information is regularly made available to the chief operating decision maker. If the following information is regularly reviewed by the chief operating decision maker it must be disclosed:

- Revenues from external customers
- Revenues from transactions with other operating segments
- Interest revenue
- Interest expense
- Depreciation and amortisation
- Material items of income and expense
- Interests in profit or loss of associates and joint ventures
- Income tax expense or income

- Material non-cash items other than depreciation or amortisation
- The amount of investment in associates and joint ventures
- The amounts of additions to non-current assets (with some exclusions).

Reconciliations

Reconciliations are required to be disclosed as follows:

The total of the reportable segments' revenues to the entity's revenue
The total of the reportable segments' profits or losses to the entities profit or loss before tax and discontinued operations
The total of the reportable segments' assets to the entity's assets
The total of the reportable segments' liabilities to the entity's liabilities (if reported)
The total of the reportable segments' amounts in respect of every other reportable item of information.

Information about products and services

In addition to the information requirements set out above, an entity must make the following disclosures (unless these are already made via the disclosures described above):

Information about products and services: the revenues from external customers for each product and service, or similar groups of products and services.

Information about geographical areas:

1. Revenues from external customers attributable to the entity's country of domicile and the total of revenues attributable to all foreign countries.
2. Non-current assets located in the entity's country of domicile and the total of non-current assets located in all foreign countries.

Information about major customers:

If revenues in respect of a single customer amount to 10% or more of total revenues this should be disclosed (there is no requirement to disclose the name of the customer).
In respect of information about products, services and geographical areas, the disclosure requirement is waived if the cost to develop the information would be 'excessive'.

16.3.2 Operating segments – discussion

The disclosures required by IFRS 8 for a large multinational group of entities could be very extensive indeed. However, the nature and extent of the disclosure is, at least in part, determined by the entity's own internal reporting and decision-making processes because of the stipulation, applicable to many of the disclosure items, that information is to be disclosed only if it is made available to the chief operating decision maker. This means that disclosures are unlikely to be directly comparable between entities. However, IFRS 8 is designed to allow users to see the type and categories of information that are used at the highest levels in the entity for decision-making. There is the further advantage that disclosure, while in many cases extensive, should not be excessively costly because it is based upon information reported and used within the business.

16.4 The limitations of financial reporting information

The objective of financial statements is set out in the IASB's *Framework for the Preparation and Presentation of Financial Statements,* published in July 1989:

The objective of financial statements is to provide information about the financial position, performance and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions.

A rather substantial limitation of financial statements, is, however, stated in the following paragraph:

Financial statements prepared for this purpose meet the common needs of most users. However, financial statements do not provide all the information that users may need to make economic decisions since they largely portray the financial effects of past events and do not necessarily provide non-financial information.

In summary, it appears that although financial statements may well be useful to a wide range of users, their usefulness is somewhat limited. The principal drawback is the fact that financial statements are oriented towards events that have already taken place. However, there are other significant limitations in the value of the information contained in a set of financial statements. These can be summarised under the following principal headings.

Timeliness

By the time financial statements are received by users, 2 or 3 months or longer may have elapsed since the year end date. The earliest of the transactions that contribute to the income and expense items accumulated in the income statement will have taken place probably 15 or more months previously.

In some jurisdiction there may be a requirement for large, listed, entities to produce half-yearly or even quarterly financial statements. Where these are available, the timeliness problem is somewhat diminished. However, the information contained in such statements may be limited in comparison to that produced in the annual report. For example, quarterly statements may include only an income statement without a statement of financial position or statement of changes in equity. Also, it is possible that they will have not been subject to verification is the form of audit.

Comparability

1. Comparisons over time between the financial statements of the same entity may prove to be invalid, or only partially valid, because significant changes have taken place in the business. The disclosure provisions of IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* may assist the analyst in respect of this particular category of change. However, it may not be possible to discern the effect of other significant changes. For example, a business that makes an investment in a new non-current item, say a major addition to its production facilities coupled with a significant increase in working capital, is not obliged to disclose any information about how well or badly the new investment has performed. The analyst may, for example, be able to see that the entity's profitability overall has decreased, but the explanations could be as follows:

- The investment has proved to be very successful, but its success is offset by the rapidly declining profitability of other parts of the business's productive capacity. As these elements are gradually replaced over the next 2 or 3 years, profitability is likely to increase overall.
- The investment has proved to be less successful than expected and is producing no better a return than the worn-out machinery it replaced.
- Although productive capacity has increased, the quality of goods overall has declined, and the business has not been able to maintain its margins.

  Financial statements simply do not provide sufficient information to permit the analyst to see these finer points of detail.

2. Comparability over time is often threatened by the effects of price inflation. This can, paradoxically, be particularly insidious where the general rate of inflation in the economy is comparatively low because analysts and others are not conscious of the effect. For example, suppose that the rate of price inflation applicable to a particular entity has been around 2.5 per cent per year over a 5-year period. Sales in 20X3 were reported at $100,000. A directly comparable level of sales in 20X4 would be $102,500 ($100,000 × 1.025). Therefore, sales in 20X4 would have to have increased to more than $102,500 before any real increase could be claimed. However, the analyst, seeing the two figures alongside each other on the income statement, and knowing that inflation is running at a low level, may very well not take this factor into account.
3. Changes in accounting policy and accounting practices may affect comparability over time in the same entity. Also, when comparing the financial statements of two or more entities, it is really quite likely that there will be some differences in accounting policy and/or practice between them. The type of differences which make comparisons difficult include the following:
   - Different approaches to valuation of non-current assets, as permitted under IAS 16 *Property, Plant and Equipment*. An entity that revalues its non-current assets on a regular basis, as permitted by that standard, is likely to have higher carrying values for its assets than an entity that carries non-current assets at depreciated historical cost. Also, the depreciation charges of the revaluing entity are likely to be higher. The two entities are therefore not strictly comparable.
   - A different approach to the classification of expenses in the income statement. At the margins it is not always easy to decide whether or not expenses should be classified as part of cost of sales. Different entities may vary in their treatment of some expenses, and so may produce variations between them in gross profit margin.
   - More or less conservative approaches to judgements about the impairment of assets. Impairment review inevitably involves some degree of estimation.

   Only the first of these three items relates to, strictly speaking, an accounting policy difference. The other two relate to variations in respect of judgemental issues. Where there is a difference in formal accounting policies adopted, it is, at least, possible to discern this from the financial statements and to make some kind of adjustment to achieve comparability. However, judgemental matters are almost impossible to adjust for.
4. Businesses may appear to be comparable in that they operate in the same business sector. However, each business has unique features, and a particular business may not be

strictly comparable with any other. Segment disclosure does allow for a more required approach to comparisons, although as we have seen:

- Not all entities are required by the accounting standard to make segment disclosures.
- Identifying segments is, necessarily, a judgmental matter. It is quite possible that one entity would identify a particular part of its business as a reportable segment, whereas another would not make the same judgement.

5. Financial statements are prepared to a particular date annually. The annual financial statements of an entity with a year end of 31 December are not strictly comparable with those of an entity with a June year end. The difference is only 6 months, but significant events may have occurred in the industry or the economy as a whole that affect the statements prepared to the later date but not those prepared to the earlier date.
6. It may be inappropriate to compare two companies of very different sizes, or to compare a listed with a non-listed entity. A large entity may be able to take advantage of economies of scale that are unavailable to the small entity, but that is not to say that the smaller entity is inefficient. It may, relatively speaking, be a better manager of the resources available to it. Conversely, a smaller entity may be able to react more rapidly to changes in economic conditions, because it can be easier to effect radical change in that environment.

   Listed entities are subject to a great deal of additional regulation and their activities are far more likely than those of an unlisted entity to attract media coverage. Their share prices are widely advertised and are sensitive to alterations in market perceptions. It can be less acceptable for a listed entity to take risks or any course of action that might affect a regular flow of dividends to shareholders. By contrast, an unlisted entity whose shares are held by a limited number of people may be able to make investment decisions that result in a curtailment of dividends in the short term in exchange for projected higher returns in the long-term. So, operational flexibility varies between companies, and this may mean that their financial statements are not really comparable, or at least, that comparisons must be treated with caution.

Verification

Although regulations relating to audit vary from one country to another, it is likely that, in most jurisdictions, the financial statements of larger entities are audited. However, smaller entities' financial statements may not be subject to audit, and so the analyst has no external report on their validity or the fairness of their presentation.

International issues

Where the financial statements of entities based in different countries are being compared, there may be further sources of difference in addition to those already covered in this section.

1. The entities may be subject to differing tax regimes.
2. The financial statements may be based on different legal and regulatory systems. For example, traditionally, German, French and Spanish financial statements have been prepared in accordance with tax regulation (so, e.g. the depreciation allowances provided for in the financial statements are exactly those allowable for tax purposes). The preparation of British and Irish financial statements, by contrast, is focused much more

upon the objective of achieving a true and fair view, and the link between accounts for tax purposes and accounts for filing and presentation purposes has been relatively weak.

3. The relative strength and weaknesses of a national economy, and of the exchange rate relating to its national currency, may produce cyclical differences in the profitability of business entities. These effects may have the result of reducing comparability of the financial statements of two businesses located in different countries.

Provision of non-financial information

It was noted earlier in this section: '… financial statements do not provide all the information that users may need to make economic decisions since they largely portray the financial effects of past events and do not necessarily provide non-financial information.' (the IASB's *Framework for the Preparation and Presentation of Financial Statements*). Major listed entities have tended, in recent years, to provide more non-financial information in their financial statements, and it is increasingly common to find disclosures relating to, for example, environmental issues. However, there is a dearth of regulation relating to non-financial disclosure, and users cannot rely on finding a consistent level of high quality information in annual reports.

16.5 Limitations of ratio analysis

Ratio analysis is dependent upon the range and quality of quantitative information available in entities' financial statements. If the quality of information is restricted in one or more of the ways described in Section 16.2, any ratios calculated using the information are likely to be of limited assistance. For example, an accounting ratio that can be very misleading is return on capital employed. The following example illustrates the danger of drawing inappropriate conclusions from accounting information.

Example

Two entities, A and B, operate in the same industry sector and have a similar scale of operations. Their profit, capital employed and ROCE figures are as follows for the year ended 31 December 20X3:

	A	*B*
	$	*$*
Profit	260,000	310,000
Capital employed	1,820,000	1,360,000
ROCE%	14.3%	22.8%

On the face of it, B appears to produce a ROCE figure far in excess of A. However, our view of the comparison might change if we were informed that A has a policy of revaluing non-current assets, whereas B does not. B's capital employed is lower for this reason, but its profits are also higher because it deducts relatively lower depreciation figures in its income statement.

Additional limitations of ratio analysis include the following:

Calculation method

As we have seen in preceding chapters the only accounting ratio to have a prescribed method of calculation is earnings per share which is regulated through IAS 33 *Earnings per share*. In respect of some of the other accounting ratios, there may be more than one, quite valid, method of calculation. In Section 14.5.2, for example, we encountered two perfectly valid approaches to the calculation of gearing. When making comparisons between financial statements it is important to ensure that the same method of calculation is used consistently, otherwise the comparison will not be valid.

Reliability

As we saw in Chapter 14, many ratios are calculated using average figures. Often the average is based on only two figures: the opening and closing. However, these may not be representative of a true average figure, and so any ratios calculated on the basis of such a figure will be unreliable. This effect is noticeable in businesses with seasonal operations. For example, suppose that an artificial Christmas tree business starts building up its stock from a low point at the beginning of February, gradually accumulating stock to build up to a maximum level at the beginning of November. Eighty-five per cent of its annual sales total is made in November and December. If the business has an accounting year end of 31 January (which would make sense as there's not much going on at the time of year), stock levels will be at their lowest level. (Opening stock + closing stock)/2 will certainly produce an average stock figure but it will not be representative of the business's level of activity.

The idea of the norm

Sometimes textbooks and lecturers attempt to set norms for ratios: for example, that current ratio should ideally be around 2, or 1.5 or 2.5. However, setting norms is both unrealistic and unhelpful. Some types of successful business can, and do, operate successfully with a substantial excess of current liabilities over current assets. Such businesses typically sell for cash, so don't have receivables, turn over their stock very quickly (perhaps because it's perishable) but manage to take the maximum amounts of credit from their suppliers.

Inappropriate use of ratios

Not all ratios are useful or applicable in all business situations, and the analyst must take care over the selection of ratios to use. For example, a business may have a mixture of cash and credit sales, but it would normally not be possible to distinguish between them armed only with the information included in the annual financial statements. However, seeing a line for revenue and a line for receivables, the analyst (or student) might assume that it was therefore sensible to work out the number of days sales represented by receivables. In fact, though, the ratio would be meaningless, and the analyst could be seriously misled by it.

Limited usefulness of ratios

Mostly, the calculation and analysis of ratios simply leads to more questions, and these cannot necessarily be answered where information is limited. Ratios, and more importantly, their analysis may contribute to an understanding of a entity's business operations, but quite often they simply lead to more questions.

A related point is that stand-alone ratios are generally of very limited use. The analyst may be able to calculate that a business's gross profit percentage is 14.3 per cent for a particular year. In isolation, that piece of information is really quite useless. It's reassuring to know that the business has actually made a positive gross profit, but without comparators, it's hard to say much more than that.

16.6 Creative accounting

'Creative accounting' goes by many names. In the USA it is more commonly referred to as 'earnings management' or 'aggressive accounting'. 'Creative accounting' is probably the most widely used term in the UK and Europe, but the term 'window dressing' may also be found. In this chapter the term 'creative accounting' will be used.

Defining the nature and scope of creative accounting is not a straightforward matter. On a very broad level, it is possible to argue that all accounting is creative, because it involves a series of choices about policies, about what should be included and so on. Financial reports present only a partial view of the business they represent (e.g. internally generated goodwill is not capitalised and human resource assets do not figure in the statement of financial position). Despite the best efforts of accounting regulators there remains wide scope for the use of judgement in matters such as the determination of useful lives of assets and provisions for doubtful debts.

Creativity may be a natural element in the development of accounting. Accountants may need to be creative where, for example, there is no prescribed accounting treatment for a transaction. This need arose more frequently at times in the past when accounting regulation was sketchy or non-existent. Creativity in this context may positively enhance and assist the development of accounting. However, these days, the term 'creative accounting' is more commonly used in a way which suggests that it involves a rather suspect, shady approach to accounting. It carries connotations of manipulation of figures, deliberate structuring of series of transactions and exploitation of loopholes in the rules.

Is creative accounting wrong? It can be very difficult to draw a distinction between aggressive use of the options offered by regulation, creative accounting and fraud. Some years ago, Alun Jones of the securities firm UBS Phillips & Drew employed the analogy of a slippery slope in categorising various approaches to accounting. There are six stages on the slippery slope:

1. conservative accounting
2. less conservative accounting
3. low quality profits
4. wishful thinking
5. creative or misleading accounting
6. fraud.

In this analysis creative accounting is next door to outright fraud. Accounting and securities regulation has become more stringent in recent years, and prosecutions for fraud involving accounting manipulation have become more common, especially in the United States.

16.6.1 Methods employed by creative accountants

Financial statements can be manipulated in many ways, some more acceptable than others. Methods include the following:

Altering the timing of transactions

For example, the despatch of sales orders could be hurried up or delayed just before the year end to either increase or decrease sales for the reporting period. Other examples include delaying sales of non-current assets and the timing of research and development expenditure. If an entity needs to improve its results it may decide upon a lower level of research and development activity in the short term in order to reduce costs. Delaying the replacement of worn-out assets falls into the same category. Some people would regard this type of 'manipulation' as falling outside of the definition of creative accounting.

Artificial smoothing

This approach involves the exploitation of the elements of choice that exist in accounting regulation. Although the IASB has worked hard to reduce the number of allowed alternative treatments, there remains some scope for artificial adjustments in respect of, for example, the choice of inventory valuation method, the estimated useful lives of non-current assets and the choice between valuation of non-current assets at revalued amounts or depreciated historical cost that is permitted by IAS 16 *Property, Plant and Equipment* and IAS 40 *Investment Property.* A change in accounting policy would, of course, have to be noted in the year in which it occurs, but its effects are not so easily discernible after that first year.

The use of provisions has been exploited in the past as a way in which to manage reported earnings. The judicious creation and then subsequent release of provisions has been a very effective way of ensuring that reported profits showed a consistent picture of growth. However, by issuing IAS 37 *Provisions, Contingent Liabilities and Contingent Assets,* the IASB effectively put a stop to many of the abuses of provisions that had taken place previously.

Classification

One of the grey areas that persists in accounting is the classification of debit items as either expenses of the current year or as non-current assets. If items are classified as non-current assets they do not impact (unless they are depreciated) on the reported income for the period. One of the most celebrated cases of mis-classification in recent years occurred in the US long-distance phone company WorldCom. Over a 3-year period the business improperly reported $3.8 billion of expenses as non-current assets, thus providing a considerable boost to reported earnings. The company is also reported as having manipulated provisions in order to increase reported earnings. In this particular case, the scale of the irregularities has been such that senior officers are currently being prosecuted for fraud.

Other areas of the financial statements which provide opportunities for creative accounting via classification include the categorisation of expenses and income as exceptional or extraordinary items, and the decisions about classification as reportable segments where the entity is required to undertake segment reporting.

Exclusion of liabilities

Under-reporting liabilities in the statement of financial position can help to improve accounting ratios. For example, the calculation of gearing would be affected. Also, total capital employed would be reduced, so that return on total capital employed would appear to be higher. Entities have sometimes been able to take advantage of loopholes in accounting regulation to arrange off-balance sheet financing in the form of subsidiary undertakings that are technically excluded from consolidation. Generally, regulation has been tightened to make this more difficult, but as shown by the recent celebrated Enron case (where so-called Special Purpose Entities were set up to provide finance to the business; these SPEs were, however, excluded from the group accounts, so that their liabilities did not impact on the business) off-balance sheet finance remains a possibility.

Recognition of revenue

Aggressive accounting often exploits relatively tax revenue recognition rules. Some examples of inappropriate revenue recognition include:

- recognising revenue from sales that are made conditionally (i.e. where the purchaser has the right to return the goods for an extended period, or where experience shows that returns are likely);
- failing to apportion subscription revenue over the appropriate accounting periods but instead recognising it immediately;
- recognising revenue on goods shipped to agents employed by the entity;
- recognising the full amount of revenue when only partial shipments of goods have been made.

Managing market expectations

This final category of manipulation has nothing to do with massaging an entity's figures, but it does involve the way the entity presents itself to the world. Reporting by listed entities, especially in the US market, is driven very much by analysts' expectations. It may be easier to massage their expectations rather than to improve the reported results by use of creative accounting techniques. Directors of listed entities meet analysts in briefing meetings where they have the opportunity to influence analysts' expectations by forecasting fairly poor figures. When the entity then proceeds to turn in a better result than expected, the market's view of the shares may be enhanced. This is a psychological game of bluffing which may backfire on the reporting entity if analysts become aware of what it is doing.

16.6.2 The motivation to use creative accounting

Various research studies have examined the issue of managerial motivation to use creative accounting. The following have been identified as significant factors:

Tax avoidance. If income can be understated or expenses overstated, then it may be possible to avoid tax.

Increasing shareholder confidence. Creative accounting can be used to ensure an appropriate level of profits over a long period. Ideally, this would show a steady upward trajectory without nasty surprises for the shareholders, and so would help to avoid volatility in share prices, and would make it easier to raise further capital via share issues.

Personal gain. Where managerial bonuses are linked to profitability, there is a clear motivation for managers to ensure that profits hit the necessary threshold to trigger a bonus payment.

Indirect personal gain. There is a market in managerial expertise, in which demand often appears to outstrip supply. A manager's personal reputation in the marketplace will almost certainly be enhanced by association with entities that have strong earnings records. So, although the pay-off may not be either immediate or obvious, there is likely over the longer term to be a reward in terms of enhanced reputation and consequent higher earning power.

Following the pack. If managers perceive that every other entity in their sector is adopting creative accounting practices, they may feel obliged to do the same.

Meeting covenants. Sometimes, lenders insist on special covenant arrangements as a condition of making a loan: for example, they may stipulate that an entity's current ratio should not fall below 1.5:1, or that gearing never exceeds 35 per cent. In such cases, if the entity cannot meet those covenants that it has agreed to, the lender may be able to insist upon immediate repayment, or to put the entity into liquidation. Where an entity is in danger of failing to meet its covenants, there is an obvious incentive for managers (especially if they genuinely feel that the difficulty is short-term in nature) to massage the figures so that the covenant is, apparently, met.

16.7 Special problems in analysing financial obligations

It was noted in the previous section that one possible method of creative accounting is to under-report liabilities. If liabilities are not reported, investors and other users of financial statements may be seriously misled. The analysis of financial obligations may be complicated by the existence of creative accounting techniques designed to keep obligations off the statement of financial position, but there are other problems that do not necessarily fall into the category of creative accounting.

Some of these problems are briefly discussed below.

Interpretation of redeemable debt

Debt may be redeemable at the option of the entity or of the holder. Sometimes it will carry a range of dates. For example, a security may be described as '10 per cent redeemable loan notes 2008/2012'. The analyst must be aware of such securities as their redemption could prove difficult if the business is short of liquid funds and/or is already highly geared. Where a date range is shown, it is probably most prudent to assume that the business will be obliged to redeem at the earliest possible date.

Contingencies

The accounting treatment of contingencies is covered by IAS 37 *Provisions, Contingent Liabilities and Contingent Assets.* Students should recall that a provision is recognised when:

(a) an entity has a present obligation (legal or constructive) as a result of a past event;
(b) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation;
(c) a reliable estimate can be made of the amount of the obligation.

'Probable' means more likely than not; that is, there is a greater than 50 per cent probability of the obligation requiring settlement. If the probability is below 50 per cent but is not regarded as remote, then the potential obligation is noted as a contingent liability. It should be clear that much hinges on the probability estimate. It is quite possible that substantial potential obligations could be included as contingent liabilities on the basis that they have, say, a 40 per cent probability of occurrence. The analyst must read the notes to the financial statements carefully so as to be aware of the existence of contingencies. Where an item is noted as a contingent liability together with a note of the estimated financial impact, it may be useful to calculate the impact on the entity's liquidity and to work out accounting ratios both with and without the item.

Earn-out arrangements

Earn-out arrangements are a special type of contingency that may arise upon the acquisition of a group undertaking.

Example

During its financial year ended 31 December 20X4, CY acquired 80% of the issued share capital of DZ for $3.2 million. An earn-out arrangement was written into the contract whereby if total audited profit before distributions for the two full financial years ending 31 December 20X6 were to exceed $600,000, CY would be obliged to pay an additional $0.4 million to the shareholders from whom it purchased the DZ shares.

How should CY account for this potential obligation in its financial statements for the year ended 31 December 20X5?

The potential obligation should be accounted for in accordance with IAS 37. There is a legal obligation arising from a past event, and the extent of the obligation can be measured reliably. The only point at issue is whether or not the outflow of funds associated with the obligation can be regarded as probable or not. If it is probable (and a reasonable probability estimate is feasible given that DZ's results will be available) then a provision will be made in the financial statements of the group or the year ended 31 December 20X5. If the outflow is not probable it is likely to be disclosed as a contingency.

As in the case of other contingent liabilities, the analyst must read the financial statements throughly, so as to be aware of all noted contingencies. If the obligation is not already recognised it may be worth examining the effect of the earn-out payment on the group's cash flow and statement of financial position ratios.

16.8 Summary

This chapter has completes the coverage of the learning outcomes associated with the financial analysis section of the learning system. Once this chapter has been fully absorbed and the end of chapter questions have been practiced, students should be able to analyse financial statements in the context of information provided in the accounts and corporate report to comment on an entity's performance and position.

The chapter has extended the ranges of knowledge about analysis techniques and the disclosure of segment information.

Note to students:
It cannot be emphasised too frequently, that the way to acquire the skills of a financial analyst is to keep on practising. Students should obtain a range of annual reports of entities reporting under IFRS, in order to exercise their ability to analyse and interpret financial information. This can be quite hard work, especially at first, but it is worth persevering. A high level of ability in analysing financial information is to be expected of a CIMA qualified accountant.

Students should find that, with the appropriate level of practice they are able to prepare a concise report on the results of their analysis. There are additional notes on how to practice these types of questions in the section entitled preparing for the examination.

Note that question 1 at the end of this chapter is an example of a type of question that could be set in F2: it combines elements of two different syllabus areas, in this case financial analysis and accounting for groups of companies.

Revision Questions 16

Question 1

A friend of yours has recently been left a portfolio of investments by a relative. The portfolio includes 150 shares in SDB, a listed entity that designs, manufactures and supplies houses in kit form for export to developing countries. Having recently received the financial statements of the entity for the financial year ended 31 July 20X6, your friend, who has some basic knowledge of accounting, has asked you to clarify certain points for him, and to provide him with a brief report on the position of the business.

The income statement, statement of changes in equity, and statement of financial position, together with comparatives are as follows:

SDB: Consolidated income statement for the year ended 31 July 20X6

	20X6	*20X5*
	$'000	$'000
Revenue	25,200	25,300
Cost of sales	18,400	18,000
Gross profit	6,800	7,300
Distribution costs	970	1,030
Administrative expenses	1,750	1,720
Finance costs	1,220	1,140
Share of losses of joint venture	1,670	–
Profit before tax	1,190	3,410
Income tax expense	250	780
Profit for the period	940	2,630
Attributable to:		
Equity holders of the parent	810	2,230
Non-controlling interest	130	400
	940	2,630

SDB: Consolidated statement of changes in equity for the year ended 31 July 20X6

	Share capital $'000	*Other reserves* $'000	*Retained earnings* $'000	*Minority interest* $'000	*Total equity* $'000
Balance at 1 August 20X5	4,000	–	18,600	540	23,140
Profit for the period			810	130	940
Dividends			(2,470)	(330)	(2,800)
Issue of share capital	1,600	2,000			3,600
Balance at 31 July 20X6	5,600	2,000	16,940	340	24,880

SDB: Consolidated statement of financial position as at 31 July 20X6

	20X6		*20X5*	
	$'000	$'000	$'000	$'000
ASSETS				
Non-current assets:				
Property, plant and equipment	19,900		17,200	
Investment in joint venture	7,500		–	
		27,400		17,200
Current assets:				
Inventories	8,300		6,900	
Trade receivables	4,700		4,100	
Cash	3,100		13,000	
		16,100		24,000
		43,500		41,200
EQUITY AND LIABILITIES				
Equity attributable to shareholders of the parent:				
Called up share capital ($1 shares)	5,600		4,000	
Retained earnings	16,940		18,600	
Other reserves	2,000		–	
		24,540		22,600
Non-controlling interest		340		540
Total equity		24,880		23,140
Non-current liabilities:				
Long-term loans		13,600		13,000
Current liabilities:				
Trade payables	4,770		4,280	
Income tax	250		780	
		5,020		5,060
		43,500		41,200

Your friend's queries are as follows:

1. 'I've looked up IAS 31 *Interests in joint ventures,* which mentions proportionate consolidation and equity accounting as possible methods of accounting for joint ventures. I've not previously encountered joint ventures, or proportionate consolidation. Can you explain how IAS 31 affects these financial statements?
2. The long-term loans are described in a note as redeemable loan notes 20X8–10. What does this mean, and what are the implications for SDB's position?

3. There is a note about a contingent liability of $10 million. Apparently, one of the models of house kit supplied by SDB has a tendency to collapse in adverse weather conditions, and $10 million is the amount claimed by litigants in a case that is due to be heard within the next 18 months. SDB's directors think it's possible that the entity will have to pay out. This seems a very large amount of money. How likely is it that the entity will have to pay out, and how bad would the effect be?
4. I can see that the business's profitability has suffered during the year, but if anything, I'm more concerned about the fact that the cash balance has fallen by more than $9 million. I'd very much like to have your opinion on the business's position.'

Requirements

Write a report to your friend that:

(a) Explains the concept of a jointly controlled entity and the possible approaches to accounting for it, identifying possible reasons for the selection of accounting method by SDB. **(9 marks)**

(b) Analyses the financial statements of SDB, focusing as requested upon the business's position, and including references to the queries about the redeemable loan notes and the contingent liability. **(16 marks)**

(Total marks = 25)

? Question 2

AXZ is a rapidly expanding entity that manufactures and distributes hair care and other beauty products. Its directors are currently considering expansion into foreign countries by means of acquisitions of similar entities. Two acquisition possibilities are to be considered at the next board meeting: DCB, an entity operating in Lowland, and GFE which operates in Highland. The targets are of similar size, and operate within similar economic parameters and the same currency, although their tax regimes differ substantially. Neither entity is listed. Neither Lowland nor Highland require unlisted entities to comply with IFRS, and consequently both entities comply with local GAAP. Local GAAP in both countries is in most respects similar to IFRS but there are some differences which must be taken into account when making comparisons between financial statements produced in the two countries. AXZ is listed, and complies with IFRS.

The directors of both DCB and GFE have co-operated fully in providing detailed information about their businesses. Provided that a reasonable price is offered for the shares, takeover is unlikely to be resisted by either entity. AXZ can afford to fund one acquisition but not both.

The most recent income statements of the three entities are provided below, together with some relevant statement of financial position totals.

Income statements for the year ended 30 September 20X6

	AXZ	*DCB*	*GFE*
	$'000	$'000	$'000
Revenue	8,300	1,900	2,200
Cost of sales	5,600	1,300	1,400
Gross profit	2,700	600	800
Distribution costs	252	60	65
Administrative expenses	882	180	250
Finance costs	105	25	65
Profit before tax	1,461	335	420
Income tax expense	366	134	105
Profit for the period	1,095	201	315

Extracts from statements of financial position as at 30 September 20X6

Total equity	4,820	1,350	1,931
Non-current liabilities (borrowings)	1,500	500	650
Non-current assets	9,950	1,680	2,400

Notes

1. It is customary for entities complying with local GAAP in Lowland to adopt the rates of depreciation used by the tax authorities. Tax depreciation is calculated on the straight-line basis in all cases, at a rate of 12.5% each year on all non-current assets. DCB's non-current assets have been held, on average, for three years, and none are fully depreciated. The age profile of non-current assets held by AXZ and GFE is very sim ilar, but both entities charge an average of 10% straight line depreciation each year. In order to be able to appraise the potential investments using comparable data, the directors of AXZ intend to use figures adjusted by applying a 10% depreciation rate to the non-current assets of DCB.

   All depreciation in all three entities has been charged to cost of sales.
2. Accounting for financial instruments is similar under Lowland GAAP and IFRS. However, Highland's GAAP takes a less prescriptive approach. GFE has $100,000 of 5% non-participating shares included in equity. Under IFRS, these shares would be classified as long-term liabilities. The 5% fixed charge on these shares has been reflected in the statement of changes in equity; under IFRS it would be shown as part of finance costs. This charge would not, however, be allowable against income tax in Highland.
3. The directors of AXZ plan to finance the acquisition through a combination of equity and debt that will be similar, proportionately, to the existing capital structure. When assessing possible takeover targets the following accounting ratios are of especial interest:

   Gross profit margin
   Profit before tax as a percentage of revenue
   Return on equity
   Return on total capital employed
   Non-current asset turnover
   Gearing (long-term debt as a percentage of equity)

Their policy is to consider targets for takeover only if the above ratios for the combined group would not be adversely affected to any material extent.

Requirements

(a) Calculate and tabulate the key ratios both before and after taking into account the information in notes 1 and 2 above. **(15 marks)**

(b) Analyse, interpret and prepare a concise report for the directors of AXZ upon the financial statement information provided for the three entities, together with the ratios provided in the table prepared in part (a). (You should calculate any additional ratios that are likely to be useful to the directors in making their decision). **(10 marks)**

(Total marks = 25)

? Question 3

You are the assistant to the finance director (FD) of OPQ, a well-known retailer of music, video and games products. The entity's profit margins are under increasing pressure because of the entry of on-line retailers into the market. As part of their response to this challenge, OPQ's directors have decided to invest in entities in the supply chain of their most popular products. They are currently considering the acquisition of the business that supplies some of their best-selling computer games, PJ Gamewriters (PJ). The FD has asked you, as a preliminary step, to examine the most recent financial statements of the entity.

PJ was established in 20W9 by twin brothers, Paul and James, who had recently graduated in computing. Their first business success was a simulated empire building game; this has continued to bring in a large proportion of their revenue. However, they have also been successful in a range of other games types such as combat simulations, golf and football management games. The business has grown rapidly from year to year, and by 20X5 it employed ten full-time games writers. Manufacture and distribution of the software in various formats is outsourced, and the business operates from office premises in a city centre. PJ bought the freehold of the office premises in 2002, and its estimated market value is now $900,000, nearly $350,000 in excess of the price paid in 2002. Apart from the freehold building, the business owns few non-current assets.

The equity shares in PJ are owned principally by Paul, James and their parents, who provided the initial start-up capital. Paul and James are the sole directors of the business. A small proportion of the shares (approximately 8%) is owned by five of the senior software writers. PJ is now up for sale as the principal shareholders wish to realise the bulk of their investment in order to pursue other business interests. It is likely that about 90% of the shares will be for sale. The copyrights of the games are owned by PJ, but no value is attributed to them in the financial statements.

PJ's income statement and summarised statement of changes in equity for the year ended 31 July 20X5, and a statement of financial position at that date (all with comparatives) are as follows:

PJ: Income statement for the year ended 31 July 20X5

	20X5	*20X4*
	$'000	$'000
Revenue	2,793	2,208
Cost of sales (see note)	(1,270)	(1,040)
Gross profit	1,523	1,168
Operating expenses	(415)	(310)
Profit from operations	1,108	858
Interest receivable	7	2
Profit before tax	1,115	860
Income tax expense	(331)	(290)
Profit for the period	784	570

Note: Cost of sales comprises the following:

	20X5	*20X4*
	$'000	$'000
Games writers' employment costs	700	550
Production costs	215	160
Directors' remuneration	200	200
Other costs	155	130
	1,270	1,040

PJ: Summarised statement of changes in equity for the year ended 31 July 20X5

	20X5	*20X4*
	$'000	$'000
Opening balance	703	483
Profit for period	784	570
Dividends	(500)	(350)
Closing balance	987	703

PJ: Statement of financial position at 31 July 20X5

	20X5		*20X4*	
	$'000	$'000	$'000	$'000
Non-current assets				
Property, plant and equipment		610		620
Current assets				
Inventories	68		59	
Trade receivables	460		324	
Cash	216		20	
		744		403
		1,354		1,023
Equity				
Share capital	60		60	
Retained earnings	927		643	
		987		703
Current liabilities				
Trade and other payables	36		30	
Income tax	331		290	
		367		320
		1,354		1,023

Requirements

(a) Prepare a report commenting upon the financial performance and position of PJ Games writers, calculating and interpreting any relevant accounting ratios. **(17 marks)**

(b) Explain the limitations of your analysis, identifying any supplementary items of information that would be useful. **(8 marks)**

(Total marks = 25)

Question 4

You are the accountant of Acquirer. Your entity has the strategy of growth by acquisition and your directors have identified an entity, Target, which they wish to investigate with a view to launching a takeover bid. Your directors consider that the directors of Target will contest any bid and will not be very co-operative in providing background information on the entity. Therefore, relevant financial information is likely to be restricted to the publicly available financial statements.

Your directors have asked you to compute key financial ratios from the latest financial statements of Target (for the year ended 30 November 20X2) and compare the ratios with those for other entities in a similar sector. Accordingly, you have selected ten broadly similar entities and have presented the directors with the following calculations:

Ratio	*Basis of calculation*	*Ratio for target*	*Spread of ratios for comparative entities*		
		Highest	*Average*	*Lowest*	
Gross profit margin	Gross profit Revenue	42%	44%	38%	33%
Operating profit margin	Profit from operations Revenue	29%	37%	30%	26%
Return on total capital	Profit from operations Total capital	73%	92.5%	69%	52%
Interest cover	Profit from operations Finance cost	1.8 times	3.2 times	2.5 times	1.6 times
Gearing	Debt capital Total capital	52%	56%	40%	28%
Dividend cover	Profit after tax Divident	5.2 times	5 times	4 times	3 times
Turnover of inventory	Cost of sales Closing inventory	4.4 times	4.5 times	4 times	3.2 times
Receivables days	Trade receivables 1 day's sales revenue	51 days	81 days	62 days	49 days

Requirements

(a) Using the ratios provided, write a report that compares the financial performance and position of Target to the other entities in the survey. Where an issue arises that reflects particularly favourably or unfavourably on Target, you should assess its relevance to a potential acquirer. **(16 marks)**

(b) Identify any reservations you have regarding the extent to which the ratios provided can contribute to an acquisition decision by the directors of Acquirer. You should highlight the extent to which the financial statements themselves might help you to overcome the reservations you have identified. **(9 marks)**

(Total marks = 25)

Question 5

DM, a listed entity, has just published its financial statements for the year ended 31 December 20X4. DM operates a chain of 42 supermarkets in one of the six major provinces of its country of operation. During 20X4 there has been speculation in the financial press that the entity was likely to be a takeover target for one of the larger national chains of supermarkets that is currently under-represented in DM's province. A recent newspaper report has suggested that DM's directors are unlikely to resist a takeover. The six board members are all nearing retirement, and all own significant minority shareholdings in the business.

You have been approached by a private shareholder in DM. She is concerned that the directors have a conflict of interests and that the financial statements for 20X4 may have been manipulated.

The income statement and summarised statement of changes in equity of DM, with comparatives, for the year ended 31 December 20X4, and a statement of financial position, with comparatives, at that date are as follows:

DM: Income statement for the year ended 31 December 20X4

	20X4	*20X3*
	$m	$m
Revenue, net of sales tax	1,255	1,220
Cost of sales	(1,177)	(1,145)
Gross profit	78	75
Operating expenses	(21)	(29)
Profit from operations	57	46
Finance cost	(10)	(10)
Profit before tax	47	36
Income tax expense	(14)	(13)
Profit for the period	33	23

DM: Summarised statement of changes in equity for the year ended 31 December 20X4

	20X4	*20X3*
	$m	$m
Opening balance	276	261
Profit for period	33	23
Dividends	(8)	(8)
Closing balance	301	276

DM: Statement of financial position as at 31 December 20X4

	20X4		*20X3*	
	$m	$m	$m	$m
Non-current assets				
Property, plant and equipment	580		575	
Goodwill	100		100	
		680		675
Current assets				
Inventories	47		46	
Trade receivables	12		13	
Cash	46		12	
		105		71
		785		746
Issued capital and reserves				
Share capital	150		150	
Retained earnings	151		126	
		301		276
Non-current liabilities				
Interest-bearing borrowings	142		140	
Deferred tax	25		21	
		167		161
Current liabilities				
Trade and other payables	297		273	
Short-term borrowings	20		36	
		317		309
		785		746

Notes

1. DM's directors have undertaken a reassessment of the useful lives of non-current tangible assets during the year. In most cases, they estimate that the useful lives have increased and the depreciation charges in 20X4 have been adjusted accordingly.
2. Six new stores have been opened during 20X4, bringing the total to 42.
3. Four key ratios for the supermarket sector (based on the latest available financial statements of twelve listed entities in the sector) are as follows:
   (i) Annual sales per store: $27.6 million
   (ii) Gross profit margin: 5.9%
   (iii) Net profit margin: 3.9%
   (iv) Non-current asset turnover (including both tangible and intangible non-current assets): 1.93

Requirements

(a) Prepare a report, addressed to the investor, analysing the performance and position of DM based on the financial statements and supplementary information provided above. The report should also include comparisons with the key sector ratios, and it should address the investor's concerns about the possible manipulation of the 20X4 financial statements. **(20 marks)**

(b) Explain the limitations of the use of sector comparatives in financial analysis. **(5 marks)**

(Total marks = 25)

Solutions to Revision Questions 16

Solution 1

Report on the financial statements of SDB for the year ended 31 July 20X6

Requirements

(a) Joint ventures, according to IAS 31, fall into three principal categories: jointly controlled assets, operations and entities. Joint control arises where decisions must be made unanimously between the controlling parties, and no one party is dominant. It appears that during the year, SDB has invested in a jointly controlled entity. A jointly controlled entity is a venture involving the establishment of an entity in which each venturer has an interest. The entity could be, for example, a partnership or a limited liability corporation. IAS 31 prefers the adoption of the proportionate consolidation method: this involves combining the entity's share of assets, liabilities, income and expenses with its own assets, liabilities and so on. However, it also permits the use of the equity method which involves recognising the investment (at cost plus share of any subsequent profits less amounts distributed) on one line in the statement of financial position, with a one line entry in the income statement showing the share of profits in the joint venture for the period. The proportionate consolidation method has the advantage that it results in financial statements that show the assets, liabilities and profits over which the entity has either control or joint control.

IAS 31 permits the use of equity accounting because it recognises the argument that joint control is not the same as control. In SDB's case, its directors may feel that they exert significant influence rather than joint control. However, it is also possible that the directors wish to avoid augmenting, for example, liabilities by including those under joint control because it would provide a less positive view of the entity. (Note: where equity accounting is adopted, IAS 31 requires extensive disclosure by note of the amounts of assets and liabilities in the joint venture. Therefore, it should be possible to adjust the statement of financial position figures to an approximation of proportionate consolidation.)

(b) The position of the business has deteriorated in some respects between 20X5 and 20X6. As you pointed out, the cash balance has declined by almost \$9 million. This is not necessarily a problem, of course: cash that is not needed in the working capital cycle should be used for investment in profitable opportunities. There appears to have been some investment in property, plant and equipment (the net book value has increased by \$2.7 million – 15.7%), but the principal investment has been in the joint venture. The income statement shows that this investment has resulted in substantial losses so far, but it is possible that the venture will show improved results in its second year of operation. Overall, however, it is clear that profitability is reduced, and if this reduction continues into the longer term it will have an effect upon the business's position and level of risk. The non-current asset turnover ratio has worsened, indicating that the new investment in property, plant and equipment has not yet paid off in terms of higher revenues.

Another substantial outgoing during the year was the payment of a dividend. This was in excess of the profit for the period for the year ended 31 July 20X5, and it is likely to be difficult for the business to sustain a dividend at that level unless profitability improves significantly.

Working capital management has declined in effectiveness. Both inventory and receivables turnover are high in absolute terms and have worsened significantly during the year. Inventory, on average, spends nearly 165 days or 5.5 months on the premises. There may be operational reasons for this, but it could also suggest that management is not in full control of the current assets. While the current and quick ratio suggest no immediate problems, both have declined substantially in the year.

The description attached to the loan notes shows that they are payable between the years 20X8 and 20Y0. It is quite possible that the directors plan to replace them with other long-term loans. However, if the fall in profitability and the deterioration in working capital management were to continue, a lender might require higher interest rates to reflect increased risk. The interest rates on the current loan appear to be around 9%. Interest cover is not a problem at the moment, but, again, this ratio has declined over the year because of the reduction in profitability.

The contingent liability is, indeed, worrying. Such liabilities would be recognised (that is, would appear in the statement of financial position) only where the assessment of probability of adverse outcome exceeded 50%. The fact that the contingent liability is noted means that the probability of an adverse outcome is assessed at less than 50%. If the full amount of $10 million were to be payable the outlook for the business could be very poor. If a major product failure were to be proven, it is likely to have a very bad effect on sales of similar products, and could even result in the closure of the business. Even if other product sales are not affected, the business would be left with the problem of how to find the very large sum required. It is not immediately clear how this could be done, especially as the outcome of the case may very well coincide with the redemption of loan notes.

Conclusion

While the business is currently solvent, and, indeed, has a positive cash balance of $3.1 million, the position in the slightly longer term could become very much worse. The product liability case represents a severe threat to the business. Most indicators already show a worsening position, and the directors need to address, as a matter of urgency, the disappointing joint venture results, the general decline in profitability and the poor working capital management.

Appendix

	20X6	20X5
Inventory turnover	8,300/18,400 × 365 = 164.6 days	6,900/18,000 × 365 = 139.9 days
Receivables turnover	4,700/25,200 × 365 = 68.1 days	4,100/25,300 × 365 = 59.1 days
Current ratio	16,100/5,020 = 3.2	24,000/5,060 = 4.7
Quick ratio	(16,100 − 8,300)/5,020 = 1.6	(24,000 − 6,900)/5,060 = 3.4
Gearing	13,600/24,880 × 100 = 54.7%	13,000/23,140 × 100 = 56.2%
Asset turnover	25,200/19,900 = 1.27	25,300/17,200 = 1.47
Interest cover	(6,800 − 970 − 1,750)/1,220 = 3.3	(7,300 − 1,030 − 1,720)/1,140 = 4.0

Solution 2

Requirements

(a)

Table: key ratios before and after adjustment for GAAP differences

	AXZ	DCB		GFE	
		Before adjusting	*After adjusting*	*Before adjusting*	*After adjusting*
Gross profit margin	32.5%	31.6%	35.1%	36.4%	Unchanged
PBT/Sales %	17.6%	17.6%	21.2%	19.1%	18.9%
Return on equity	30.3%	24.8%	25.9%	21.8%	22.6%
ROTCE	24.7%	19.5%	20.8%	18.8%	18.8%
NCA turnover	0.83	1.13	1.0	0.92	Unchanged
Gearing	31.1%	37.0%	32.2%	33.7%	40.1%

Workings

(W1) *Ratios before adjustment*

	AXZ	DCB	GFE
Gross profit margin	2,700/8,300 × 100 = 32.5%	600/1,900 × 100 = 31.6%	800/2,200 × 100 = 36.4%
PBT/Sales %	1,461/8,300 × 100 = 17.6%	335/1,900 × 100 = 17.6%	420/2,200 × 100 = 19.1%
ROE	1,461/4,820 × 100 = 30.3%	335/1,350 × 100 = 24.8%	420/1,931 × 100 = 21.8%
ROTCE	(1,461 + 105)/(4,820 + 1,500) × 100 = 24.7%	(335 + 25)/(1,350 + 500) × 100 = 19.5%	(420 + 65)/(1,931 + 650) × 100 = 18.8%
NCA turnover	8,300/9,950 = 0.83	1,900/1,680 = 1.13	2,200/2,400 = 0.92
Gearing	1,500/4,820 × 100 = 31.1%	500/1,350 × 100 = 37.0%	650/1,931 × 100 = 33.7%

(W2) *Adjustments to DCB's depreciation and non-current assets*

Non-current assets at net book value = \$1,680,000, after an average 3 years' depreciation out of an 8 year estimated life. NBV = 5/8 × cost, so cost = \$1,680,000 × 8/5 = \$2,688,000. Annual depreciation charges on this basis = \$2,688,000 × 12.5% = \$336,000.

If a rate of 10% SL depreciation is applied, net book value would be as follows:

\$2,688,000 × 7/10 = \$1,881,600. Annual depreciation charges on this basis = \$2,688,000 × 10% = \$268,800.

NBV would increase by \$1,881,600 − \$1,680,000 = \$201,600
Equity would increase to \$1,551,600 (\$1,350,000 + \$201,600)

Cost of sales would decrease by the difference in depreciation charges: \$1,300,000 − \$336,000 + \$268,800 = \$1,232,800.
Gross profit would be: \$1,900,000 − \$1,232,800 = \$667,200.
Profit before tax would be \$667,200 − \$60,000 − \$180,000 − \$25,000 = \$402,200

(W3) *Revised ratio calculations for DCB*

	DCB
Gross profit margin	667.2/1,900 × 100 = 35.1%
PBT/Sales %	402.2/1,900 × 100 = 21.2%
ROE	402.2/1,551.6 × 100 = 25.9%
ROTCE	(402.2 + 25)/(1,551.6 + 500) × 100 = 20.8%
NCA turnover	1,900/1,881.6 = 1.0
Gearing	500/1,551.6 × 100 = 32.2%

(W4) *Adjustments in respect of reclassification of GFE's financial instrument*

Equity reduces from \$1,931,000 to \$1,831,000
Non-current liabilities increase from \$650,000 to \$750,000
Finance costs increase from \$65,000 to \$75,000
Profit before tax decreases from \$420,000 to \$415,000.

(W5) *Revised ratio calculations for GFE*

	GFE
Gross profit margin	Remains the same
PBT/Sales %	415/2,200 × 100 = 18.9%
ROE	415/1,831 × 100 = 22.6%
ROTCE	(415 + 70)/(1,831 + 750) × 100 = 18.8%
NCA turnover	Remains the same
Gearing	750/1,831 = 40.1%

(b)

Report on financial statement information for AXZ, DCB and GFE: financial year ended 30 September 20X6

Before any adjustment is made in respect of depreciation, DCB's ratios indicate a poorer performance and position than GFE in several important respects: gross margin, profit before tax as a percentage of sales and gearing are all worse than GFE's, and all ratios, with the exception of non-current asset turnover are worse than AXZ's.

After adjustment, however, DCB's ratios are much improved, especially once adjustments in respect of GFE's financial instruments are made. The adjusted figures show that both DCB and GFE produce significantly better profit margins than AXZ. DCB's profit before tax as a percentage of sales and return on equity are both superior to those of the other entities. Non-current asset turnover in DCB has reduced following the increase in net book value because of the depreciation adjustment. However, it is still better than the equivalent for the other entities. DCB's gearing percentage is similar to that of AXZ; both are lower than GFE's which is significantly higher following the reclassification of some of the equity to debt. Interest cover (see appendix) would not give cause for concern in any of the entities, but GFE's is significantly lower than in the other two entities.

On most of the key ratios, DCB appears to be the preferable acquisition target. Return on equity and return on total capital employed are both lower, and gearing is slightly higher than in AXZ. However, the effect overall on the new group's ratios might not be regarded as material. On the other hand, even where the ratios are more advantageous, the overall effect on group ratios might not make much of a difference. For example, if AXZ and DCB were to combine, total profit before tax would be $1,461,000 + 402,200 = $1,863,200, all other things being equal. Total sales would be $8,300,000 + $1,900,000 = $10,200,000. The group profit as a percentage of sales figure would be $1,863.2/10,200 × 100 = 18.3%. This is only 0.7% higher than AXZ's existing figure.

Further investigation would be needed before making a final decision. DCB has followed the tax treatment in depreciating its non-current assets; however, it is possible that an average asset life of eight years actually represents a better assessment of DCB's own asset base. Also, it is worth noting that DCB does appear to be subject to a significantly higher rate of income tax than the other two entities (see appendix). This perception requires further investigation, and detailed tax advice should be obtained before the directors of AXZ make their decision.

Appendix

Additional ratio calculations

	AXZ	DCB	GFE
Income tax expense as a percentage of profit before tax	336/1,461 × 100 = 23.0%	134/335 × 100 = 40%	105/415 × 100 = 25.3%
Interest cover	(2,700 − 252 − 822)/105 = 15.5	(667.2 − 50 − 180)/25 = 17.5	(800 − 65 − 250)/70 = 6.9

Solution 3

(a) **Report**

To: The Finance Director
From: Assistant
Subject: PJ Gamewriters

PJ Game writers is a very successful business. Between 20X4 and 20X5 its revenue increased by 26.5% and its gross profit by 30.4%. However, unusually, cost of sales includes directors' remuneration, presumably because the directors are directly involved in games writing. If director's remuneration is excluded from the analysis, gross profit restated increased by 26.0%, that is, very much in line with the revenue increase.

Games writers' employment costs comprise a significant part of cost of sales (55.1% − 20X4: 52.9%). If the business were to be taken over by OPQ this expense might change if new writers were brought in to replace Paul and James. Production costs have increased to 17% of cost of sales (20X4: 15.4%). These costs are outsourced, and it may be worth considering whether it is cost effective to continue such arrangements. Distribution costs are, presumably, included within cost of sales, probably under the category 'other costs'.

Operating expenses have increased by 33.9% between 20X4 and 20X5, that is, at a faster rate than revenue. Given that some of these expenses might be expected to be fixed, this rate of increase would require further information and explanation. Despite this increase, net profit margin has increased slightly, helped by an increase in interest receivable.

Turning to the statement of financial position, the position appears healthy. No cash flow statement is provided, but nevertheless, it is clear that the business generates substantial amounts of cash. During the 20X4-5 financial year, PJ managed to pay substantial amounts of dividend, directors' remuneration and income tax, while increasing its cash balance by almost $200,000. The current ratio has improved by a large margin from 1.26:1 at the 20X4 year end to 2.03:1. There is little change to inventories which, in any case, constitute a relatively minor element in current assets, but trade receivables has increased sharply, representing 60.1 days of sales (20X4: 53.6 days). It might be possible to make a significant improvement in this collection period.

Return on equity is very substantial in both years. However, this ratio should be treated with caution. Equity has been increased by $350,000 for the purposes of the calculation in both years so as to produce a more realistic result. The figure of $350,000 is strictly applicable only in 20X5, however, and the equivalent figure in 20X4 might well have been lower. It should also be appreciated that a higher asset valuation would give rise to additional depreciation charges which would reduce profits. In addition it is worth noting that the value of equity would almost certainly be substantially higher if the intangible asset of software copyrights were to be included.

Conclusion

PJ has expanded significantly whilst managing to maintain its margins and a sound financial position. The business is cash rich and has needed no external financing. It appears to be a good prospect for acquisition and further detailed investigation is recommended.

Appendix: calculations

1. Cost of sales analysis

	20X5 $'000	*% of total*	*20X4* $'000	*% of total*
Games writers' employment costs	700	55.1	550	52.9
Production costs	215	17.0	160	15.4
Directors' remuneration	200	15.7	200	19.2
Other costs	155	12.2	130	12.5
	1,270	100.0	1,040	100.0

2. Gross profit margin (excluding directors' remuneration from cost of sales)

	20X5	*20X4*
	\$'000	\$'000
Gross profit (as stated)	1,523	1,168
Add: directors' remuneration	200	200
Gross profit restated	1,723	1,368
Gross profit margin	1,723/2,793 × 100 = 61.7%	1,368/2,208 × 100 = 62.0%

3. Operating expenses as a percentage of revenue

   20X5: 415/2,793 × 100 = 14.9%
   20X4: 310/2,208 × 100 = 14.0%

4. Net profit margin (excluding directors' remuneration from profit)

	20X5	*20X4*
	\$'000	\$'000
Net profit (as stated)	784	570
Add: directors' remuneration	200	200
Net profit restated	984	770
Net profit margin	984/2,793 × 100 = 35.2%	770/2,208 × 100 = 34.9%

5. Current ratio

   20X5: 744:367 = 2.03:1
   20X4: 403:320 = 1.26:1

6. Trade receivables collection period

$$20\text{X}5 \quad \frac{460}{2,793} \times 365 = 60.1 \text{ days}$$

$$20\text{X}4 \quad \frac{324}{2,208} \times 365 = 53.6 \text{ days}$$

7. Return on equity (including potential revaluation of \$350,000)

$$20\text{X}5 \quad \frac{1,115}{987 + 350} \times 100 = 83.4\%$$

$$20\text{X}4 \quad \frac{860}{703 + 350} \times 100 = 81.7\%$$

Directors' remuneration may not be relevant to the analysis here. ROE excluding directors' remuneration is:

$$20\text{X}5 \quad \frac{1,115 + 200}{987 + 350} \times 100 = 98.4\%$$

$$20\text{X}4 \quad \frac{860 + 200}{703 + 350} \times 100 = 100.7\%$$

(b) Financial analysis is almost always hampered by limitations. In the case of PJ there are some specific limitations in respect of the scope of the information reported in the annual financial statements. The value of the software titles generated during the life of the business is likely to be a substantial sum. As noted in part (a) it is not possible to calculate a realistic return on equity figure without this information. If OPQ is going to enter into serious negotiations to purchase PJ, the value of the copyrights should be established at an early stage. A further limitation is that financial statements place no value on the human assets employed within the business. However, where a business like PJ is to be taken over, such elements should, in any event, be downplayed. Paul and James will, presumably, leave the business, and it may not be possible to retain the services of all of the software writers.

A more detailed breakdown of certain elements in the income statement would be helpful in analysing the performance of the business. Within cost of sales 'other costs' constitute a significant item in both years, and the nature of operating expenses is obscure.

There are general limitations to the value of financial statements to the analyst. Some of the limitations relevant to PJ include the following:

(i) Financial statements are prepared for the common needs of most users. Where they are being used to assist in making a specific decision (such as whether or not to invest in an entity, as in this case) the information they contain is likely to be found wanting.

(ii) Timeliness is often a problem. PJ's financial statements have apparently been prepared within a quite reasonable timeframe. However, this is clearly a business experiencing rapid growth, and it is likely that more current information will be needed, perhaps in the form of management accounts, in order to make an informed decision.

(iii) It is usually helpful to have a more complete picture than that provided by a single set of financial statements. Also, it is important to obtain a full set of notes to the financial statements as these often contain useful information. In the case of PJ, complete sets of the financial statements since the business was founded would be helpful.

Solution 4

(a)

Report on the ratios and their implications

To: The board of directors of Acquirer
From: An accountant
Subject: Proposed acquisition of Target
Date: 19 November 20X3

Following our earlier discussions, I have computed key ratios for Target and some similar entities. These are attached as an appendix to this report.

It is notable that the gross profit margin of Target is towards the upper end of the range of comparison, while the net margin is towards the lower end. The relatively high gross margin could be due to a sales mix of relatively more profitable products or, alternatively, because of a tighter than average control of manufacturing costs. Given apparent problems in controlling other operating expenses (see below) a different sales mix is perhaps the most likely explanation.

The superior performance at gross margin level is largely negated by an apparently extremely poor control of other operating expenses. These seem to be running at around 13% of revenue as against 7 or 8% for the entities in the sample. It may be that the costs are being incurred to finance future growth and cannot be capitalised under existing accounting standards. However, they could equally be due to inherent inefficiencies and this issue will certainly require further investigation before proceeding further.

Return on capital is slightly higher than the average for the sample and given that net profit margin is towards the lower end, this implies a ratio of revenue to capital that is towards the upper end of the range revealed by the sample. This is quite encouraging as capital investment does appear to produce strong revenue streams provide costs can be controlled.

Interest cover is towards the lower end of the range of comparison and gearing is towards the upper end. There is a good chance these two issues are linked as other things being equal you would expect interest cover to vary in inverse proportion to gearing. The level of gearing may not be a key factor in an acquisition decision as we may well wish to refinance the entity if it becomes a subsidiary.

Dividend cover is relatively high compared with other entities in the sample. This could be due to strategic decision by current management to retain a greater proportion of profits, but it could equally well be indicative of a strain on liquidity and this issue would require further investigation. However, the level of past divided payout will not necessarily be a key future issue since, if Target becomes our subsidiary, we will be in a position to determine divided levels within legal constraints.

Both inventory turnover and receivables days are towards the higher end of the performance range. This is a good sign which might have been expected given the relatively high turnover of capital that Target seems to enjoy.

I hope you find this report useful. Please do not hesitate to contract me if you have any queries regarding its contents.

Yours sincerely
Accountant

(b)

Limitations of the ratios

One key factor is the appropriateness of the sample as a basis for comparison with Target. It is inevitably subjective to identify 10 entities that are valid for this purpose. It is rare to find two entities with exactly the same operating environments and there may well have been a number of other equally valid samples of 10 entities that would have produced different ratios and therefore a different interpretation.

Another issue is the extent to which conventional ratios are computed from the results of a single accounting period. Different entities have different year ends and in the case of Target the most recently available financial statements are nearly a year old. The latest available financial statements could be for a period that is not typical of the trend of performance over a longer period due to unusual or non-recurring items. There is also the inherent problem of computing a ratio such as return on capital, where a performance figure, like profit, is expressed as a ratio or percentage of a position figure like capital.

A further key factor to bear in mind is that, despite the existence of an increasingly complex regulatory framework, entities still have considerable discretion in the manner that the financial statements are prepared and presented given the significant amount of judgement that is involved in selecting accounting policies.

A final factor to bear in mind is that financial ratios inevitably focus on historical financial aspects. Many useful performance indicators are non-financial in nature. It is possible to compute non-financial ratios, but these are often difficult to compare between entities given the voluntary nature of much non-financial information that is currently disclosed. It is also questionable as to how much historical financial data can contribute to a future acquisition decision.

The financial statements themselves would be of some assistance in overcoming the defects mentioned in this report. They would provide information on the key accounting policies followed by the entity and would provide separate disclosure of non-recurring items. They may well also provide a degree of non-financial information and some predictions about the future prospects of the entity. However, as stated earlier, this information is unlikely to be as highly regulated as the historical financial data and so its reliability may be questioned.

✓ Solution 5

(a)

Report to Investor on DM
Date: May 20X5

Note: The ratio calculations referred to in the report can be found in the Appendix. In 20X4 DM has expanded rapidly, increasing the number of its stores from 36 to 42. The annual sales figure per store has fallen substantially since 20X3; however, this may be because the new stores have been open for only part of the year. Even so, DM's annual sales per store is significantly higher than the sector average. However, it may simply have larger stores than average.

Gross profit margin has increased slightly, but the increase in operating profit margin is substantial. Operating expenses have actually fallen by over 27% in the year. The expenses may have been affected by the lengthening of most non-current asset lives, and the consequent decrease in depreciation charges.

The review of depreciation has resulted in higher profits and it is certainly possible that the directors have deliberately manipulated the results. Also, the significant decrease in operating expenses may indicate that some items of expenditure have been classified as capital rather than revenue in nature. This method of creative accounting can be quite difficult to confirm using the information available in a set of financial statements. Nevertheless, it would be sensible to conduct further comparisons using information in the notes to the financial statements.

Net profit margin is significantly lower in both years than the sector average, despite higher than average gross profit margin. It is noticeable, however, that the net profit margin has increased from 1.9% to 2.6% in the year, and this could, for reasons already given, be a result of deliberate manipulation.

The current ratio in both years is low. It appears that suppliers are being squeezed for credit. The cash level is higher in 20X4 than in 20X3. It appears from the statement of financial position that suppliers may be providing even longer credit than usual. Trade and other payables have increased by over 8%, whereas the increase in cost of sales is only 2.8%. Gearing does not appear to give cause for concern.

Despite several new store openings the level of property, plant and equipment remains almost the same. It may be that the majority of the investment in new stores was made during 20X3. Non-current asset turnover has improved although it has not quite reached the sector level.

Summary

DM is a profitable and rapidly expanding entity. Its margins compare reasonably well with the sector average although net profit margin is relatively poor. It is possible that the entity's directors have deliberately manipulated the financial statements in order to produce better results in the hope of affecting the offer price in a takeover bid. They do stand to benefit personally and may be keen to sell the company in order to realise a lump sum upon retirement. However, it is not possible to state conclusively that the financial statements have been manipulated. Further investigation would be required, especially, if sufficient information is available, to ascertain the reasons for the fall in operating expenses.

APPENDIX: ratio calculations

Ratio	*20X4*		*20X3*		*Sector comparative*
Gross profit	78/1,255 × 100	6.2%	75/1,220 × 100	6.1%	5.9%
Operating profit margin	57/1,255 × 100	4.5%	46/1,220 × 100	3.8%	N/A
No of stores		42		36	N/A
Annual sales per store	1,255/42	$29.9 m	1,220/36	$33.9 m	$27.6 m
Net profit margin	33/1,255 × 100	2.6%	23/1,220 × 100	1.9%	3.9%
Non-current asset turnover	1,255/680	1.85	1,220/675	1.81	1.93
Current ratio	105/317	0.33:1	71/309	0.23:1	N/A
Gearing (debt/equity)	142/301 × 100	47.2%	140/276 × 100	50.7%	N/A

Note: (a) The gearing calculation could also include short-term borrowings as part of debt capital.

(b) Sector comparatives often provide useful information for the analyst, but should be treated with some caution for the following reasons:

- The comparatives are usually, as in this case, based on an average of entities. Averages can be skewed by one or two atypical cases.
- No two entities are completely alike. For example, DM trades in only one of six provinces in its country. Economic conditions may vary between provinces, and so it may not be valid to compare DM using averages based on entities operating in other provinces.
- Although international standard setters have attempted to reduce the range of accounting choices available, there remain, quite legitimately, areas of accounting policy difference between entities.
- There are different ways of calculating some of the common accounting ratios. The analyst must be sure that the method of calculation is consistent.
- Information published for the sector may not contain all the ratios that the analyst would ideally require. For example, in this case, it would be useful to know the average gearing and current ratios.