

How to approach performance appraisal questions

by **Steve Scott**
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Performance appraisal is an important topic in Paper 2.5, Financial Reporting. It has been the subject of many past examination questions and will continue to be examined on a regular basis. This article is intended to give candidates some guidance as to what is expected from a good answer and how to approach such questions. The scenario of a performance appraisal question can take many forms.

Vertical or trend analysis

A company's performance may be compared to its previous period's performance. Past results may be adjusted for the effects of price changes. This is referred to as trend or vertical analysis. A weakness of this type of comparison is that there are no independent benchmarks to determine whether the chosen company's current year results are good or bad. Just because a company's results in say 2003 are better than its results in 2002 - it does not mean the 2003 results are good. It may be that its results in 2002 were particularly poor.

Horizontal analysis

To try to overcome the problem of vertical analysis, it is common to compare a company's performance for a particular period with the performance of an equivalent company for the same period. This introduces an independent yardstick to the comparison. However, it is important to pick a similar sized company that operates in the same industry. Again, this type of analysis is not without criticism - it may be that the company selected as a comparator may have performed particularly well or particularly poorly.

Industry average comparison

This type of analysis compares a company's results (ratios) to a compilation of the average of many other similar types of company. Such schemes are often operated on a subscription basis whereby subscribing companies calculate specified ratios and submit them to the scheme. In return they receive the average of the same ratios from all equivalent companies in the scheme. This has the advantage of anonymity and avoids the bias of selecting a single company.

The context of the analysis needs to be kept in mind. You may be asked to compare two companies as a basis for selecting one (presumably the better performing one) for an acquisition. Alternatively, a shareholder may be asking for advice on how their investment in a company has performed. A bank may be considering offering a loan to a company and requires advice. It may be that your chief executive asks for your opinion (as say the chief financial accountant) on your company's results.

Question scenarios

Most questions on this topic in Paper 2.5 have information in the scenario that requires particular consideration. A common complaint from markers is that

candidates often make no reference to such circumstances. In effect, the same answer would be given regardless of what the question said. It is worth noting that there are many 'clues' in the question - ignore them at your peril. Examples of such circumstance include:

Related party relationships and transactions: these have the potential to distort the results of a company (either favourably or unfavourably). Examples of related party transactions are:

- goods have been supplied to a company on favourable terms (in terms of price and credit arrangements)
- a subsidiary may enjoy the benefits of head office expertise (eg research knowledge) without any charge being made by the head office
- loans may be advanced at non-commercial interest rates.

A company may have entered into certain arrangements that mean its previous results are not directly comparable with its current results. Examples of this include:

- a sale and leaseback of property, plant or equipment. Such an arrangement would lower the operating assets and thus improve asset utilisation
- entering into debtor factoring (the sale of debtors to a finance house). This would obviously reduce debtor collection periods, but this would not be through improved credit control procedures
- a general revaluation of fixed assets would lead to higher capital employed (and thus a lower return on capital employed) without there being any real change in operating capacity or profitability
- a company may have implemented certain policy changes during the year (eg lowering profit margins in order to stimulate sales).

The possibilities of what might have happened are almost infinite, but what is important is that where the scenario describes events such as those described above, you take them into consideration when preparing your answer.

Most performance appraisal is based on interpreting various comparative ratios. Questions may vary in their approach, but in most questions there are some marks available for calculating ratios. Some questions will leave it for you to decide which ratios to calculate, other questions may specify which ratios have to be calculated. However, some questions may give you the ratios such that all the marks are for the analysis and interpretation of them. Another common complaint of markers is that when candidates are left to decide which ratios to calculate, they calculate far too many, thus spending very little time on their interpretation. Even in questions where there are marks available for calculating ratios, the majority of marks will still be for their interpretation.

Lack of interpretation/analysis

By far the most common complaint by markers is that candidates' comments explaining the movement or differences in reported ratios lack any depth or commercial understanding. A typical comment may be that debtor collection has improved from 60 days to 40 days. Such a comment does not constitute interpretation - it is a statement of fact. To say a ratio has gone up or down is not helpful or meaningful.

What is required from a good answer are the possible reasons as to why the ratio has changed. There may be many reasons why a ratio has changed and no-one can be certain as to exactly what has caused the change. All that is required are plausible explanations for the changes. Even if they are not the actual cause, marks will be awarded. There is no single correct answer to an interpretation question, and remember there may be clues in the scenario that would account for some of the changes in the ratios.

Examination approach

In an examination there is a (time) limit to the amount of ratios that may be calculated. A structured approach is useful where the question does not specify which ratios to calculate:

- limit calculations to important areas and avoid duplication (eg stock turnover and stock holding periods)
- it is important to come to conclusions, as previously noted, candidates often get carried away with the ratio calculations and fail to comment on them
- often there are some 'obvious' conclusions that must be made (eg liquidity has deteriorated dramatically, or a large amount of additional fixed assets have been purchased without a proportionate increase in sales).

Suggested structure to a typical answer

Comment on company performance in the following areas:

- profitability and asset utilisation
- liquidity (look for overtrading)
- gearing and security of borrowings
- prepare a cash flow statement - if specifically requested.

Profitability

The primary measure of profitability is normally considered to be the Return on Capital Employed (ROCE):

$(\text{Profit before interest and tax}/\text{shareholders funds plus long-term borrowings}) \times 100$

This is probably the most important single ratio, but it is open to manipulation. Secondary ratios indicate why the ROCE has changed:

1. Gross and net profit margin %:
 $\text{Profit (gross or net)}/\text{sales} \times 100$
2. Asset utilisation: $\text{sales}/\text{net assets}$

For example, an improvement in the ROCE is either because of improved margins or better use of assets. Increases may be due to increases in selling prices or reductions in manufacturing (or purchased) costs. They may also be caused by changes in sales mix or stocktaking errors. A change in the net profit margin is a measure of how well a company has controlled overheads. The asset utilisation ratio (sales/net assets) shows how efficiently the assets are being used.

Liquidity

Current ratio: current assets/current liabilities. Ideally it is thought that this should be between 1.5 and 2 to 1, but it can vary depending upon the market sector (eg retailers have relatively few debtors so the current, and quick, ratios may be meaningless for such businesses).

Quick ratio (or acid test): current assets less stock/current liabilities. This is expected to be at parity, ie 1 to 1. If the above liquidity ratios appear to be outside 'normal ranges' further investigation is required and stock, debtors, and creditor ratios should be looked at. These ratios can be calculated either as time periods (eg 'days') or as turnovers.

Debtor's collection period (in days): $(\text{trade debtors}/\text{credit sales}) \times 365$

Stock turnover: $\text{cost of sales}/(\text{average or closing}) \text{ stock}$

Creditor's payment period (in weeks): $(\text{trade creditors}/\text{purchases on credit}^*) \times 52$

*Note: you may have to use cost of sales if purchases figure is not available.

Comments on the above ratios

Debtor's collection period - when too high, it may be that some bad debts have not been provided for, or an indication of worsening credit control. It may also be deliberate, eg the company has decided to offer three months' credit in the current year, instead of two as in previous years. It may do this to try to stimulate higher sales.

Stock turnover - generally the higher this is, the better. If it is low, it may be an indication of obsolete stock or poor sales achievement. Sales may have fallen (perhaps due to an economic recession), but the company has been slow to cut back on production, resulting in a build up of stock levels.

Creditor payment period - if this is low, creditors are being paid relatively early or there may be unrecorded creditors. Although the credit period may represent a source of 'free' borrowing, if it is too high it may be an indication of poor liquidity (perhaps at the overdraft limit), and there may be a danger of further or renewed credit being refused by suppliers.

Liquidity problems may also be caused by 'overtrading'. In some ways this is a symptom of the success of the business. It is usually a lack of adequate financing and may be solved by an injection of capital.

Gearing

This is a far more important ratio than most candidates seem to be aware of. Company directors often spend a great deal of time and money to make this ratio appear in line with acceptable levels.

Its main importance is that as borrowings rise, risk increases (in many ways) and as such, further borrowing is difficult and expensive. Many companies have limits to the amount of borrowings they are permitted to have. These may be in the form of debt covenants imposed by lenders or they may be contained in a company's Articles,

such as a multiple of shareholders funds.

Measures of gearing

Gearing is basically a comparison of debt to equity. Preference shares are usually treated as debt for this purpose. There are two alternatives: Debt/equity or Debt/(debt + equity).

In any comparison of gearing it is important to use the same basis to calculate the gearing percentage in order for any interpretation to be meaningful. A question often asked is what level should a company's gearing be? There is no easy answer to this - a lot will depend on the nature of the industry and composition of the balance sheet assets. For example, companies with large property portfolios often have high levels of gearing without it troubling investors. But companies that have large amounts of intangible assets are not considered to have a desirable type of security to support large borrowings. It is important that the effect of debt is understood.

Example 1

Realm plc is financed by £5 million 10% preference shares, and £5 million equity. Calculate the return to each provider of finance if Realm plc's profits are:

- i. £1 million
- ii. £1.3 million
- iii. £700,000

Answer

	£000	£000	£000
	i	ii	iii
Profit	1,000	1,300	700
		(+30%)	(-30%)
Preference shareholders	500	500	500
Equity shareholders	500	800	200
% return on equity	10%	16%	4%
		(+60%)	(-60%)

Note that when profits increase by 30%, the increase in the return to equity shareholders is double this increase (a 16% return is 60% higher than a 10% return). However, the down side is that when profits fall by 30%, the reverse applies. The existence of debt increases the risks (favourable and unfavourable) to the equity shareholders. By contrast, the return to preference shareholders is 10% at all levels profit.

Investment Ratios

Earnings per share

In isolation, this ratio is meaningless for inter-company comparisons. Its major usefulness is as part of the P/E ratio, and as a measure of profit trends.

Price/earnings ratio

This is calculated by dividing a company's (stock) market price by its EPS. Say the

price of a company's shares is £2.40, and its last reported EPS was 20p. It would have a P/E ratio of 12. The mechanics of the movement of a company's P/E ratio are complex, but if this company's EPS improved to 24p in the following year, it would not mean that its P/E ratio would be calculated as 10 (£2.40/24p). It is more likely that its share price would increase such that it maintained or even improved its P/E ratio. If the share price increased to say £2.88, the P/E ratio would remain at 12 (£2.88/24p). This demonstrates the real importance of EPS in the way it has a major influence on a company's share price.

Earning yield

This is a relatively 'old' ratio which has been superseded by the P/E ratio. It is in fact its reciprocal. Earnings yield is the EPS/share price x 100. In the above example, a P/E ratio of 12 would be equivalent to an earnings yield of 8.3%.

Dividend yield

This is similar to the above except that the dividend per share is substituted for the EPS. It is a crude measure of the return to shareholders, but it does ignore capital growth which is often much higher than the return for dividends.

Dividend cover

This is the number of times the current year's dividend could have paid out of the current year's profit available to ordinary shareholders. It is a measure of security. A high figure indicates high levels of security. In other words, profits in future years could fall substantially and the company would still be able to pay the current level of dividends. An alternative view of a high dividend cover is that it indicates that the company operates a low dividend distribution policy.

Example 2

Realm plc has 5 million ordinary shares of 25p each in issue. The stock market price of the shares just before its year end is £3.00 each. The dividend yield for companies in the same sector as Realm plc is 5%. Realm plc has paid an interim dividend of £200,000, and its profit after tax is £1,250,000.

Required, calculate:

- i. the final dividend (in pence per share) to be declared such that Realm plc's dividend yield would equal its market sector
- ii. Realm plc's P/E ratio
- iii. Realm plc's dividend cover.

Answer

- i. A dividend yield of 5% of a share price of £3.00 would be achieved if total dividends for the period were 15p ($(15/300) \times 100 = 5\%$). An interim dividend of £200,000 on 5 million shares would be 4p per share. Thus the final dividend would need to be 11p per share.
 - ii. Profits of £1,250,000 on 5 million shares gives an EPS of 25p (£1,250,000/5 million). The P/E ratio would be calculated as 12 (300p/25p)
 - iii. Dividends of 15p per share from earnings of 25p per share would give a dividend cover of 1.67 times (25p/15p).
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In conclusion, candidates may be required to explain the weaknesses or limitations of ratio analysis. As a summary, it may be useful to read and work through a question from a recent Paper 2.5 examination. The first section of the answer deals with the limitations of ratios.

Example 3

Comparator assembles computer equipment from bought in components and distributes them to various wholesalers and retailers. It has recently subscribed to an inter-firm comparison service. Members submit accounting ratios as specified by the operator of the service, and in return, members receive the average figures for each of the specified ratios taken from all of the companies in the same sector that subscribe to the service. The specified ratios and the average figures for Comparator's sector are shown overleaf.

Ratios of companies reporting a full year's results for periods ended between 1 July 2003 and 30 September 2003

Return on capital employed	22.1%
Net assets turnover	1.8 times
Gross profit margin	30%
Net profit (before tax) margin	12.5%
Current ratio	1.6:1
Quick ratio	0.9:1
Stock holding period	46 days
Debtors' collection period	45 days
Creditors' payment period	55 days
Debt to equity	40%
Dividend yield	6%
Dividend cover	3 times

Comparator's financial statements for the year to 30 September 2003 are set out below:

Profit and loss account	£000
Turnover	2,425
Cost of sales	(1,870)
Gross profit	555
Other operating expenses	(215)
Operating profit	340
Interest payable	(34)
Exceptional item (note (ii))	(120)
Profit before taxation	186
Taxation	(90)
Profit after taxation	96
Dividends	(90)
Net profit for the period	6

Profit and loss reserve - 1 October 2002	179
Profit and loss reserve - 30 September 2003	185

Balance Sheet	£000	£000
Fixed assets (note i)		540

Current Assets

Stock	275
Debtors	320
Bank	nil
	<u>595</u>

Creditors: amounts falling due within one year

Bank overdraft	35
Trade creditors	350
Proposed dividends	30
Taxation	85
	<u>(500)</u> 95

Creditors: amounts falling due after more than one year

8% loan notes	(300)
	<u>335</u>

Share Capital and Reserves

Ordinary shares (25p each)	150
Profit and loss account reserve	185
	<u>335</u>

Notes

- i. The details of the fixed assets are:

	Cost	Accumulated depreciation	Net book value
	£000	£000	£000
At 30 Sept 2003	3,600	3,060	540

- ii. The exceptional item relates to losses on the sale of a batch of computers that had become worthless due to improvements in microchip design.
- iii. The market price of Comparator's shares throughout the year averaged £6.00 each.

Required:

- a. Explain the problems that are inherent when ratios are used to assess a company's financial performance. Your answer should consider any additional problems that may be encountered when using inter-firm comparison services such as that used by Comparator (7 marks).
 - b. Calculate ratios for Comparator equivalent to those provided by the inter-firm comparison service (6 marks).
 - c. Write a report analysing the financial performance of Comparator based on a comparison with the sector averages (12 marks).
- 25 marks

Answer

- a. Ratios are used to assess the financial performance of a company by comparing the calculated figures to various other sources. This may be to previous years' ratios of the same company, it may be to the ratios of a similar rival company, to accepted norms (say of liquidity ratios) or, as in this example, to industry averages. The problems inherent in these processes are several. Probably the most important aspect of using ratios is to realise that they do not give the answers to the assessment of how well a company has performed, they merely raise the questions and direct the analyst into trying to determine what has caused favourable or unfavourable indicators. In many ways it can be said that ratios are only as useful as the skills of the person using them. It is also true that any assessment should also consider other information that may be available including non-financial information. More specific problem areas are:
 - Accounting policies: if two companies have different accounting policies, it can invalidate any comparison between their ratios. For example, return on capital employed is materially affected by revaluations of fixed assets. Comparing this ratio for two companies where one has revalued its fixed assets and the other carries fixed assets at depreciated historic cost would not be very meaningful. Similar examples may involve depreciation methods, stock valuation policies etc.
 - Accounting practices: this is similar to differing accounting policies in its effects. An example of this would be the use of debtor factoring. If one company collects its debts in the normal way, then the calculation of debtor days would be a reasonable indication of the efficiency of its credit control department. However if a company chose to factor its debtors (ie 'sell' them to a finance company) then the calculation of its debtor days would be meaningless. A more controversial example would be the engineering of a lease such that it fell to be treated as an operating lease rather than a finance lease.
 - Balance sheet averages: many ratios are based on comparing profit and loss account items with balance sheet items. The above ratio of debtor's days would be a good example. For such ratios to be meaningful, it is necessary to assume that the year-end balance sheet figures are representative of annual norms. Seasonal trading and other factors may invalidate this assumption. For example, the level of debtors and stock of a toy manufacturer could vary largely due to the nature of its seasonal trading.
 - Inflation can distort comparisons over time.
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- The definition of an accounting ratio. If a ratio is calculated by two companies using different definitions, then there is an obvious problem. Common examples of this are gearing ratios (some use debt/equity, others may use debt/(debt + equity)). Also, where a ratio is partly based on a profit figure, there can be differences as to what is included and what is excluded from the profit figure. Problems of this type include the treatment of exceptional items and finance costs.
- The use of norms can be misleading. A desirable range for the current ratio may be between 1.5 and 2:1, but all businesses are different. This would be a very high ratio for a supermarket (with few debtors), but a low figure for a construction company (with high levels of work in progress).
- Looking at a single ratio in isolation is rarely useful. It is necessary to form a view when considering ratios in combination with other ratios.

A more controversial aspect of using ratio analysis is that management have sometimes indulged in creative accounting techniques in order that the ratios calculated from published financial statements will show a more favourable picture than the true underlying position. Examples of this are sale and repurchase agreements, which manipulate liquidity figures, and off balance sheet finance which distorts return on capital employed and flatters gearing.

Inter-firm comparisons

Of particular concern with this method of using ratios is:

- They are themselves averages and may incorporate large variations in their composition. Some inter-firm comparison agencies produce the ratios analysed into quartiles to attempt to overcome this.
- It may be that the sector in which a company is included may not be sufficiently similar to the exact type of trade of the specific company. The type of products or markets may be different.
- Companies of different sizes operate under different economies of scale, this may not be reflected in the industry average figures.
- The year-end accounting dates of the companies included in the averages are not going to be all the same. This highlights issues of balance sheet averages and seasonal trading referred to above. Some companies try to minimise this by grouping companies with approximately similar year-ends together as in the example of this question, but this is not a complete solution.

b. Refer to Figure 1 on page 52.

c. Analysis of Comparator's financial performance compared to the sector average for the period to 30 September 2003:

To:
From: A N Allison
Date:

Figure 1: Calculation of specified ratios

	Comparator	Sector average
Return on capital employed ((186 + 34 loan	34.6%	22.1%

interest/635)		
Net assets turnover (2,425/635)	3.8 times	1.8 times
Gross profit margin (555/2,425 x 100)	22.9%	30%
Net profit (excluding exceptionals) margin (306/2,425 x 100)	12.6%	not available
Net profit (before tax) margin (186/2,425 x 100)	7.7%	12.5%
Current ratio (595/500)	1.19:1	1.6:1
Quick ratio (320/500)	0.64:1	0.9:1
Stock holding period (275/1,870 x 365)	54 days	46 days
Debtors' collection period (320/2,425 x 365)	48 days	45 days
Creditor payment period (350/1,870 x 365)(based on cost of sales)	68 days	55 days
Debt to equity (300/335 x 100)	90%	40%
Dividend yield (see below)	2.5%	6%
Dividend cover (96/90)	1.07 times	3 times

The workings are in £000 (unless otherwise stated) and are for Comparator's ratios. The dividend yield is based on a dividend per share figure of 15p (£90,000/(150,000 x 4)) and a share price of £6.00. Thus the yield is 2.5% (15p/£6.00 x 100%).

Operating performance

The return on capital employed of Comparator is impressive being more than 50% higher than the sector average. The components of the return on capital employed are the asset turnover and profit margins. In these areas, Comparator's asset turnover is much higher (nearly double) than the average, but the net profit margin after exceptionals is considerably below the sector average. However, if the exceptionals are treated as one off costs and excluded, Comparator's margins are very similar to the sector average.

This short analysis seems to imply that Comparator's superior return on capital employed is due entirely to an efficient asset turnover (ie Comparator is making its assets work twice as efficiently as its competitors). A closer inspection of the underlying figures may explain why its asset turnover is so high. It can be seen from the note to the balance sheet that Comparator's fixed assets appear quite old. Their net book value is only 15% of their original cost. This has at least two implications: they will need replacing in the near future and the company is already struggling for funding; and their low net book value gives a high figure for asset turnover. Unless Comparator has underestimated the life of its assets in its depreciation calculations, its fixed assets will need replacing in the near future. When this occurs its asset turnover and return on capital employed figures will be much lower. This aspect of ratio analysis often causes problems and to counter this anomaly some companies calculate the asset turnover using the cost of fixed assets rather than their net book value as this gives a more reliable trend. It is also possible that Comparator is using assets that are not on its balance sheet. It may be leasing assets that do not meet the definition of finance leases and thus the assets and corresponding obligations have not been recognised on the balance sheet.

A further issue is which of the two calculated margins should be compared to the sector average (ie including or excluding the effects of the exceptionals). The gross profit margin of Comparator is much lower than the sector average. If the exceptional losses were taken in at trading account level, which they should be as they relate to obsolete stock, Comparator's gross margin would be even worse.

As Comparator's net margin is similar to the sector, it would appear that Comparator has better control over its operating costs. This is especially true as the other element of the net profit calculation is finance costs, and as Comparator has much higher gearing than the sector average, one would expect Comparator's interest to be higher than the sector average.

Liquidity

Here Comparator shows real cause for concern. Its current and quick ratios are much worse than the sector average, and indeed far below expected norms. Current liquidity problems appear to be due to high levels of trade creditors and a high bank overdraft. The high levels of stock are also noteworthy and they may be indicative of further obsolete stock (the exceptional item is due to obsolete stock). The debtors' collection figure is reasonable, but at 68 days, Comparator takes longer to pay its creditors than do its competitors. While this is a source of 'free' finance, it can damage relations with suppliers and may lead to a curtailment of further credit.

Gearing

As referred to above, gearing (as measured by debt/equity) is more than twice the level of the sector average. While this may be an uncomfortable level, it is currently beneficial for shareholders. The company is making an overall return of 34.6%, but only paying 8% interest on its loan notes. The level of gearing may become a serious issue if Comparator becomes unable to maintain the finance costs. The company already has an overdraft and the ability to make further interest payments could be in doubt.

Investment ratios

Despite reasonable profitability figures, Comparator's dividend yield is poor compared to the sector average. From the profit and loss account it can be seen that total dividends are £90,000 out of available profit for the year of only £96,000 (hence the very low dividend cover). It can also be noted that the interim dividend must have been £60,000 as the proposed dividend is only £30,000. Perhaps this indicates a worsening performance during the year, as normally final dividends are higher than interim dividends. Considering these factors, it is surprising the company's share price is holding up so well.

Summary

The company compares favourably with the sector average figures for profitability. However, Comparator's liquidity and gearing position is quite poor and gives cause for concern. If it is to replace its old fixed assets in the near future, it will need to raise further finance. With already high levels of borrowing and poor dividend yields, this may become a serious problem for Comparator.

Yours faithfully

A N Allison

Steve Scott is examiner for Paper 2.5
