

Analysing performance

Chapter 2

Interpreting accounts using ratio analysis

Introduction

This section explains the main accounting ratios, tools and techniques used in the interpretation of accounts and financial statements. The most important place to start in the financial analysis of accounts is with the first principles of what we are trying to achieve. It is a common fault that most people preen their profit and loss accounts incessantly, whilst paying only lip service to their balance sheets and cash flow.

As with all the ratios you are about to see, and indeed the ones in common usage within your company, there are quite simply any number of ways to put the figures together. I am constantly surprised at how organisation's own definitions of certain key ratios differs so markedly from the true original, that the use of it in their format is sometimes rather pointless. I also see many companies where there are several different definitions of the same ratio doing the rounds. That certainly makes life difficult for everyone. The point is that it doesn't really matter too much how you calculate ratios, so long as you are consistent in their application and you know what it is that the ratio is telling you.

We therefore need to see how the whole picture fits together, so let's start with the ultimate measure of business performance, return on capital employed.

Return on capital employed (ROCE)

The numerator (return) is some measure of profit. Normally profit before tax is used, as tax can often be significantly different even between outwardly similar businesses who generate similar profits.

The denominator (capital employed) is some measure of the money tied up in the enterprise.

$$\text{ROCE} = \frac{\text{Profit before tax}}{\text{Capital employed}}$$

Key Management Concept



Some people approximate capital employed as being the balance sheet total – which is adequate, but not far reaching enough. More accurately capital employed should be shareholders’ funds (share capital and reserves – often this is the balance sheet total) plus long-term liabilities. The logic behind adding long-term liabilities is that the lenders of the long-term debt are simply funding the business, in much the same way as the shareholders do, and therefore the better definition of capital employed is to include these items.

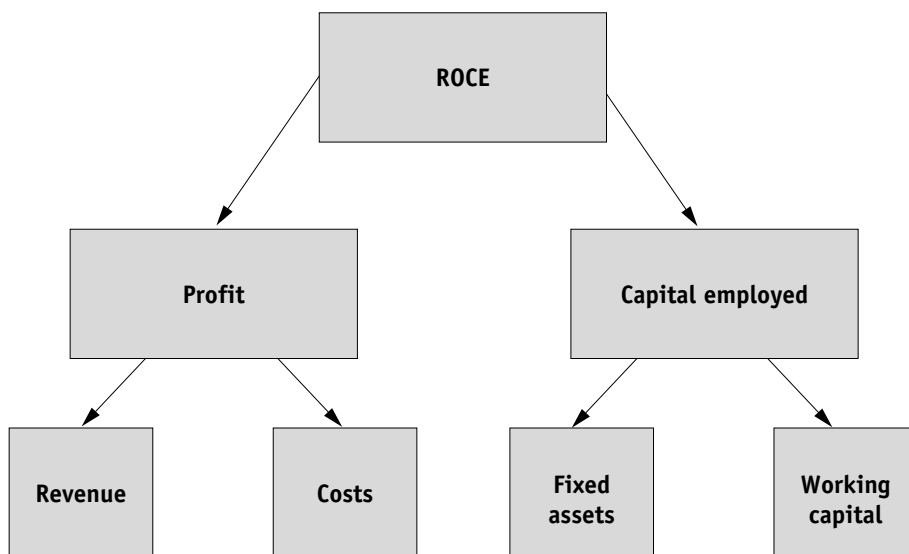
Some businesses use the acronym RONA, or return on net assets. If your business is one of these, don’t worry, since RONA is the same as ROCE. If we accept capital employed as being shareholders’ funds plus long-term liabilities, then all that is left in the balance sheet is fixed assets plus current assets less current liabilities. These items are known as net assets!

Care must be taken when using ROCE as a measure. Both profit and capital employed are subject to variations in definition. In particular, since capital employed is based on the historical cost of assets the return calculated is not a ‘real’ figure. On the other hand, by comparing the return across industries some meaningful conclusion can be reached. For example heavy manufacturing industries will have low ROCEs, whereas service industries – using less equipment – will have higher returns. Therefore companies in the same industry group should show similar ROCEs and hence variations may indicate lack of efficiency or over-investment in capital assets.

The ROCE is a prime yardstick in assessing a company’s profitability. It indicates how successfully a business is utilising its assets. A low return can be because of a low profit margin or a low asset turnover. Conversely a good return is money well invested – indicative of profitability and efficiency.

Tree of ratios

A business can therefore increase its ROCE by either increasing profits or by decreasing capital employed, or by a combination of the two. This may be rather self-evident, so perhaps what we really need to do now is to analyse how we might take the ratio trail further. To do this we should look at the classic diagram known as the tree of ratios, and this comes in many shapes and sizes. The common thread with any ratio tree, however, is that it simply states the blindingly obvious – that there is the profitability on one side, with asset efficiency on the other. Or, profit and loss compared to balance sheet ratios.



You can see that the left hand branch deals with the profit and loss analysis, whilst the right hand branch examines the balance sheet efficiency. These two critical dimensions of financial statement analysis could not be put more starkly. We all know that we should be looking at both branches of the ratio tree, but how many of us actually do so in our working lives?

Profitability measures

Taking the profitability measures first, these are likely to be commonly encountered and, frankly, quite well known.

Gross profit margin

$$\text{Gross margin} = \frac{\text{Gross profit}}{\text{Sales}} \times 100\%$$

Net profit margin

$$\text{Net margin} = \frac{\text{Net profit}}{\text{Sales}} \times 100\%$$

These margins show the profitability of the business. Margins will be constant from period to period unless something changes, costs or sales, relative to each other. Hence a falling profit margin is a sign of increasing costs or declining selling prices – or both.

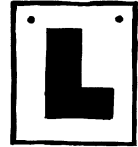
Classically one would also analyse all the costs involved in the business, expressing each cost as a percentage of sales so that they can all be added down in the same manner.

Costs as percentage of sales

$$\text{Cost} = \frac{\text{Cost}}{\text{Sales}} \times 100\%$$

Often these results are informative as to whether costs are behaving as fixed or variable costs, and whether the trend is one of improvement or worsening.

Key Learning Point



Key Management Concept

Earnings per share (EPS)

Of lesser importance for unquoted companies, this is a very important ratio which must be disclosed at the bottom of the profit and loss account for listed companies.

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{Number of ordinary shares}}$$

As will be discussed later, the EPS is used by investors in calculating the price earnings ratio (or P/E) ratio. This is simply defined as follows:

$$\text{P/E ratio} = \frac{\text{Market price of share}}{\text{Earnings per share}}$$

The P/E ratio expresses the number of years' earnings represented by the current market price and is the major indicator of the market's view of the company. The significance of the P/E ratio can only be judged in relation to the ratios of other companies in the same kind of business, although as a general rule a higher P/E ratio – share price racing ahead of earnings – shows that the market is confident of the company's prospects.

Balance sheet measures

Turning now to the balance sheet measures, these are likely to be less commonly encountered and, frankly, almost unknown to most people.

Asset turnover

This indicates how well a company is utilising its assets and is calculated as follows:

$$\text{Asset turnover} = \frac{\text{Sales}}{\text{Capital employed}}$$

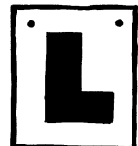
This ratio is similar to ROCE except that it deals with sales generated by the assets rather than profits generated by the assets. A low asset turnover can indicate over-investment in capital assets or that the company is not generating a sufficient volume of business for its size. Again, the type of industry involved will play a large part and, as with ROCE, service industries should show higher values than manufacturing industries.

However it suffers from the same problems as ROCE with the book values of capital employed, since revaluing the assets of a company would automatically reduce this ratio without the business having changed at all. As we have seen capital employed most usually comprises share and loan capital together with any profits already retained in the business.

Fixed asset turnover

As a sub-division, you can calculate fixed asset turnover: replacing total assets by fixed assets.

Key Learning Point



Debtor days

This is computed by dividing the year end trade debtors figure by the average daily sales. Average daily sales (sales per day) is arrived at by dividing total annual sales by 365.

$$\text{Sales per day} = \frac{\text{Total annual sales}}{365}$$

$$\text{Average collection period} = \frac{\text{Debtors}}{\text{Sales per day}}$$

This ratio is also known as 'days sales in debtors'. If a company has a standard payment term of 30 days on its sales then its average collection period should be close to 30 days. This would indicate that debts are being paid on time and that there is a steady stream of cash coming in. However if the days sales in debtors increases then this indicates that customers are taking longer to pay. Once debts get very old they are harder to collect, so a high average collection period could indicate that debtors may include amounts that will not be paid. It could also suggest that the company has customers who are unwilling to pay for some reason, perhaps unsatisfactory service.

However there are very good reasons why a firm has a high average collection period. Overseas customers and public sector bodies are notoriously slow payers although the cash is usually received in the end. Often companies do sometimes give extended credit terms to major clients. Therefore other information about the type of business is necessary before an informed judgement can be made.

Stock days

$$\text{Stock days} = \frac{\text{Stock} \times 365}{\text{Cost of sales}}$$

This ratio is probably more used than stock turnover, (which is the reciprocal of stock days) although ultimately it measures the same thing. Notice how this ratio is similar to the debtor days calculation earlier, the key difference being in the fraction's denominator. Whereas for debtor days we divide by sales (since making a sale is what gives rise to the debtor), here we divide stock by cost of sales (since that is where the stock will end up being shown in the profit and loss account).

Creditor days

$$\text{Creditor days} = \frac{\text{Creditors} \times 365}{\text{Cost of sales}}$$

This ratio is similar in outlook to debtor days, in as much as it measures the efficiency (or speed) of payment of a company's suppliers. High creditor days can mean extremely efficient purchasing techniques on the one hand, and it can simply be that there is insufficient money to pay the suppliers.

Current ratio

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

This is a common method of analysing working capital (net current assets) and is generally accepted as the measure of short-term solvency of a company. It indicates the extent to which the claims of short-term creditors are covered

by the assets that are expected to be converted to cash in a period roughly corresponding to the maturity of the claims.

Where a company is showing falling current ratios then its liquidity may be a problem. In the extreme situation where current assets are less than current liabilities, were the current creditors to call in their debts, then the company would have to sell some of their fixed assets to meet their creditors' demands.

However, care has to be taken when considering this figure. Current assets comprise stocks, debtors and cash; therefore when a company is in a market where large stocks must be held to meet immediate customer demand or where industry standard credit terms are longer than average, that company will have high current assets and hence a high current ratio.

On the other hand, where stocks and debtors are relatively small due to the sales being mainly cash and stock levels being kept as low as possible, current assets will be small and hence the current ratio will look low. Therefore, once again, comparisons must be made across an industry or over several periods to see if a general trend emerges which might give the true picture.

Quick ratio

Key Learning Point



The quick (or liquidity) ratio is based on the assumption that stocks will not be recovered quickly enough to meet the time scale for the payment of creditors, and the business must therefore look to its debtors and cash balances to cover the current liabilities. The quick ratio, sometimes referred to as the 'acid test', is therefore calculated as follows:

$$\text{Quick ratio} = \frac{\text{Current assets less stock}}{\text{Current liabilities}}$$

As with the current ratio the quick ratio must be compared across an industry if it is to be a meaningful measurement. The traditional thinking was that this

ratio should not be less than 1, but bearing in mind the differences in levels of debtors and the nature of outstanding liabilities there should be no general rule. Many companies operate successfully with quick ratios of less than 1, since the ratio only becomes a problem if the creditors call in the amounts due to them unexpectedly. Clever cash flow management can eliminate the problems of such a deficit. Again there will be a norm for a particular business or type of business.

Stock to net assets

$$\text{Stock to net current assets} = \frac{\text{Stock} \times 100\%}{\text{Net current assets}}$$

This ratio indicates the importance of stock as a percentage of working capital. The following conclusions could be drawn from too high a percentage:

- a) stocks are too high in relation to the financial resources of the business
- b) poor stock control exists
- c) obsolete stocks are being held.

On the other hand some businesses may require high levels of stock to be held if customers expect delivery on demand or if many different lines need to be kept. It is therefore important to compare companies in the same line of business who face the same demands on their stock and debtors.

Stock turnover

$$\text{Stock turnover} = \frac{\text{Cost of sales}}{\text{Stock}}$$

This ratio is useful in indicating the rate of movement of stock.

This can vary tremendously between types of business. A local baker, for example, sells all its stock every day. Therefore the average stock will be low in comparison to cost of sales for the year. On the other hand a boat builder may only build five boats each year, so at a given time his stock will be much higher as a proportion of cost of goods sold in that year.

A high stock turnover, within an industry, is generally regarded as a sign of efficiency. However in some cases it can mean that a firm is living 'from hand to mouth'.

Finance ratios

Key Management Concept



Gearing/borrowing ratio

This measures the proportion of capital employed that has been raised by fixed interest loans (and preference share capital) as opposed to equity capital.

$$\text{Gearing ratio} = \frac{\text{Debt finance (short and long term loans)}}{\text{Total capital employed (debt and equity)}}$$

Creditors will often prefer lower gearing ratios since the more debt finance a company has the higher its interest commitments will be and the less cash it will have to pay its creditors. But there are some tax advantages to debt finance, as well as a greater overall flexibility.

Gearing also varies tremendously between types of company, with some companies having more debt than equity and others having no long-term debt at all. It is one of the most complicated areas of analysis and has been the topic of much financial discussion and theory.

What you are really trying to get an answer to is the questions ‘Why have they borrowed money, and what have they done with it? Is it to sensibly expand and grow the business, or is it to plug holes in the cash flow?’ One is a valid reason, whilst the other you might look at less favourably.

Interest cover

This measures the comfort level of interest payments made annually.

$$\text{Interest cover} = \frac{\text{Profit before interest and tax}}{\text{Interest payable}}$$

For example, we as individuals all have the concept of interest cover – how many times could you afford to pay your mortgage out of your net monthly salary? If you are at the beginning of your career, the answer may well be between 1 and 2 (hopefully it will be more than 1). At the end of your career, the mortgage bill may simply be less onerous – so your interest cover may be in double digits.

Exactly the same principles apply to businesses and the interest they pay. As you might guess, when the economic cycle downturns then interest rates rise just at the same time as profits go walkabout.

Match the business with ratios

On the following pages is an example that gets you to think about ratios, their uses and their limitations a little more closely.

Your task is to match the five businesses listed below with the columns of precalculated ratios. You should make reference to the list of proforma ratios on the pages that follow. For a moderate degree of difficulty, you should be able to get the correct answers just by using ratios 1 to 5 inclusive. You can see

Activity



that ratio 1 is the overall king ratio – ROCE. Ratios 2 and 3 are measures of profitability, whilst ratios 4 and 5 address the balance sheet.

The five businesses are:

1. An electrical engineering manufacturer.
2. A large chain of shops retailing household white goods.
3. A package holiday company providing inclusive holidays in the UK and overseas.
4. A chain of betting shops.
5. A fresh food manufacturer producing 'own label' high quality foods.

Your task is to say which column of ratios (A, B, C, D or E) belongs to which business. On the following page is an explanation of the calculation of the ratios.

	Ratio	A	B	C	D	E
1	ROCE	68%	17%	21%	28%	3%
2	Gross profit	57%	12%	13%	24%	18%
3	Net profit	32%	4%	7%	7%	0%
4	Debtors' age (days)	0	88	0	44	4
5	Age of stock (days)	5	108	81	22	0
6	Asset turnover	5.2	5.1	2.9	3.7	8.6
7	Financial leverage	1.12	1.06	1.1	1.09	1.1
8	Interest cover	n/a	11	4	38	n/a
9	Current ratio	0.22	1.01	1.48	1.20	1.15
10	Quick ratio	0.20	0.49	0.80	0.89	1.15
11	Fixed asset turnover	3.1	5.0	4.1	3.8	13.1

Proforma ratios

1	ROCE	=	$\frac{\text{Profit before tax}}{\text{Shareholders funds}}$
2	Gross margin	=	$\frac{\text{Gross profit}}{\text{Sales}}$
3	Net profit	=	$\frac{\text{Net profit before tax}}{\text{Sales}}$
4	Debtors age	=	$\frac{365 \times \text{closing trade debtors}}{\text{Credit sales}}$
5	Age of stock	=	$\frac{365 \times \text{closing stock}}{\text{Cost of goods sold}}$
6	Asset turnover	=	$\frac{\text{Sales}}{\text{Net assets}}$
7	Financial leverage	=	$\frac{\text{Assets} - \text{short-term liabilities}}{\text{Shareholders funds}}$
8	Interest cover	=	$\frac{\text{Profit before interest}}{\text{Interest payable}}$
9	Current ratio	=	$\frac{\text{Current assets}}{\text{Current liabilities}}$
10	Quick ratio	=	$\frac{\text{Current assets} - \text{stock}}{\text{Current liabilities}}$
11	Fixed asset turnover	=	$\frac{\text{Sales}}{\text{Fixed assets}}$

Match the business with ratios: *solution*

The five businesses are as follows:

- A is company 4, a chain of betting shops.
- B is company 1, an electrical engineering manufacturer.
- C is company 2, a large chain of shops retailing household white goods.
- D is company 5, a fresh food manufacturer producing 'own label' high quality foods.
- E is company 3, a package holiday company providing inclusive holidays in the UK and overseas.

The logic of the answers runs something like this. Ironically you may well find that the more and harder that you think about the problems, the less easy it is to get the correct answer.

I always find that it is easier to 'visualise' the days in working capital rather than anything else. For example, A and E are similar in that they are both cash businesses (no debtors) and service businesses (no stocks). The only two options that really fit these descriptions are companies 3 and 4. Since we cannot tell the difference any further than just using the working capital ratios, we now have to turn to the profitability measures. These show straight away that A is hugely profitable, whilst E is not. Clearly A has to be company 4, therefore E has to be company 3.

You can get the next step right by asking the simple question 'Would I rather eat a 108, 81 or 22 day old yoghurt'? The answer must be none of the above, but since one has to be correct you could guess that D is in fact company 5.

A quick inspection of B suggests a manufacturer high stock and debtor days, B must therefore be company 1. That leaves C as company 2, which just about fits the profitability margins and the working capital days.

All in all not too difficult, provided you think (and guess, quite often) as to what you would imagine the business to look like. In our next example we will be getting more technical with the calculations, but in the meantime the next few pages look at practical ways in which you can influence your working capital.

Practical working capital management

This section explains the basic principles and techniques used in working capital management. It is really no more than a statement of the obvious best practice techniques for any organisation.

Key Management Concept



Debtors

- Reduce time from placement of order by customer to receipt of goods
- Reduce time taken to invoice customers
- Reduce debt collection period
- Bank receipts on a daily basis
- Avoid part deliveries, or other situations which give customers an excuse to delay payment
- Issue statements of account promptly
- Avoid despatching large quantities of orders late in the month; despatches made in the last few days of the month may not be received by the customer until the following month, thereby delaying payment by the customer
- Consider paying salesmen commission based on speed of collection of debtors and not on sales value
- Maintain personal contact with customers

Action Checklist



- Prompt payment discounts
- Payment in advance from slow/high risk payers
- Factor debts.

Action Checklist



Stock

- Establish stock reporting systems to provide stock turnover, ageing analysis, obsolescence and monitor trends
- Consider reducing storage capacity – excess capacity tempts overstocking
- Review supplier lead time and reduce stockholdings accordingly
- Monitor old, surplus and obsolete stock
- Ensure an appropriate balance of stock is held between raw materials, work-in-progress and finished goods
- Critical path analysis performed on production times will highlight points of high and low stock requirements
- Bulk-buying may not be worth the discounts received if not quickly converted into cash
- Order economic quantities
- Refuse early deliveries if costly in terms of stock holding costs
- Co-ordinate sales and production forecasts
- Consider investment in more efficient machinery to reduce work-in-progress and increase throughput
- Consider reducing production batch sizes
- Despatch finished goods promptly
- Review distribution network and stock – holding locations; increased transportation costs incurred by centralising warehousing may be less than storage at several locations

- Do not hold excessive stocks of poor profit earners, leaving insufficient space for high margin lines
- Handle returns quickly.

Creditors

- Negotiate extended terms with suppliers
- Payment on predetermined dates will maintain good supplier relationships
- Maintain contact with suppliers
- In times of cash flow problems, payment of small amounts first may ensure continuation of regular supply
- Payment by cheque rather than by bank transfer generates slight cash flow advantage.

Action Checklist



Detailed case study

Overleaf is the profit and loss accounts and balance sheets for an industrial supply wholesaler. It is a real life businesses, only the name has been changed. You have financial information for three consecutive years.

Analysis

Using the techniques learnt so far, analyse the performance of the companies:

- Is it profitable?
- Has it the potential to lose control over their liquidity?
- Is it a company that you would do business with?

Helpful hints

Start with the profit and loss account for the time being.

What do you normally do when you are faced with a set of figures like this? Some people are what I call 'Year on year' analysts. They say 'Sales are up (which they are), but so is cost of sales' and so on. What this approach misses is any feeling of exactly whether things are really in line.

What you need to do therefore, as a first step, is to 'common size' the profit and loss account. That is to say, express each cost as a percentage of sales, right the way down to the bottom line. This then gives you the solid basis on which to make assessments about whether things have moved in line with expectations, or whether things are getting out of hand.

RICHARD LIMITED			
<i>Profit and Loss Accounts</i>			
	1997	1996	1995
Turnover	3,600	3,000	2,000
Cost of Sales	2,900	2,400	1,600
Gross profit	<u>700</u>	<u>600</u>	<u>400</u>
Distribution costs	162	135	91
Administrative expenses	360	235	175
Operating profit	<u>178</u>	<u>230</u>	<u>134</u>
Interest payable	32	15	21
Profit before taxation	<u>146</u>	<u>215</u>	<u>113</u>
Taxation payable	35	52	27
Profit for the year	<u>111</u>	<u>163</u>	<u>86</u>
Dividends	40	33	0
Retained profit for the year	<u><u>71</u></u>	<u><u>130</u></u>	<u><u>86</u></u>

RICHARD LIMITED*Balance Sheets*

	1997	1996	1995
	£	£	£
Fixed Assets			
Tangible assets	197	55	51
Current Assets			
Stocks	654	553	363
Debtors	741	596	421
Cash in hand	<u>31</u>	<u>33</u>	<u>23</u>
<i>Total</i>	<u>1,426</u>	<u>1,182</u>	<u>807</u>
Creditors due within one year			
Trade and other creditors	401	407	332
Taxation	35	52	27
Finance leases	55	19	18
Bank overdraft	<u>737</u>	<u>437</u>	<u>282</u>
<i>Total</i>	<u>1,228</u>	<u>915</u>	<u>659</u>
<i>Net Current Assets</i>	198	267	148
Creditors due after one year	<u>32</u>	<u>30</u>	<u>37</u>
<i>Net worth</i>	<u><u>363</u></u>	<u><u>292</u></u>	<u><u>162</u></u>
Capital and Reserves			
Called-up share capital	25	25	25
Profit and loss account	<u>338</u>	<u>267</u>	<u>137</u>
<i>Total</i>	<u><u>363</u></u>	<u><u>292</u></u>	<u><u>162</u></u>

Have a first attempt before turning the page over and looking at the answers.

Profit and loss account analysis

The first thing to do is to look at the individual lines within the profit and loss account for each year. By expressing everything as a percentage of sales in that year you will be developing a yardstick that you can use to compare between years. Here is the profit and loss account after 'common-sizing'.

RICHARD LIMITED						
<i>Profit and Loss Accounts</i>						
	1997	% s/s	1996	% s/s	1995	% s/s
Turnover	3,600	100%	3,000	100%	2,000	100%
Cost of Sales	<u>2,900</u>	81%	<u>2,400</u>	80%	<u>1,600</u>	80%
Gross profit	700	19%	600	20%	400	20%
Distribution costs	162	5%	135	5%	91	5%
Administrative expenses	<u>360</u>	10%	<u>235</u>	8%	<u>175</u>	9%
Operating profit	178	5%	230	8%	134	7%
Interest payable	<u>32</u>	1%	<u>15</u>	1%	<u>21</u>	1%
Profit before taxation	146	4%	215	7%	113	6%
Taxation payable	<u>35</u>	1%	<u>52</u>	2%	<u>27</u>	1%
Profit for the year	111	3%	163	5%	86	4%
Dividends	<u>40</u>	1%	<u>33</u>	1%	<u>0</u>	0%
Retained profit for the year	<u><u>71</u></u>	2%	<u><u>130</u></u>	4%	<u><u>86</u></u>	4%

s/s = sales

So what can we tell from this?

We can see that the gross margin is similar year to year – 20%, 20% and 19%. Now a 1% drop in gross is not likely to be worrying, but it is worth pointing out that 1% of the sales in 1997 of £3.6m is worth around £36,000 – or 50% of the retained profits for the year!

The sales figure looks good however – good growth from year to year, and sales are booming.

Looking down at the operating profit line we can see that whilst things improved in 1996, they worsened in 1997. The operating margin improvement to 8% in 1996 (from 7% in 1995) was eradicated in 1997, as operating profit slumped to a meagre 5%. What has caused this, given that the gross margin has more or less stood up?

The answer lies in either distribution or administration costs. Distribution is a steady 5% each year: the hallmark of a true variable cost. Administration, on the other hand, has risen in 1997 to 10% of sales, a worsening of two percentage points on the reported 8% of sales in 1996. This 2% and the disappearance of 1% of gross margin accounts for the drop in operating profit from 7% to 4%.

Reading on down, interest payable is increasing in £s (increased interest rates and/or increased amount borrowed), and it looks as though the directors have started to pay dividends (avoiding national insurance on salary).

You can almost feel what is going on in the mind of the board: business and sales are booming, so let's take some reward for it all. The consequence is that while sales are going up, the level of retained profits is not going up proportionately.

Balance sheet analysis

Turning to the balance sheet, just run your eyes down the figures, calculating where necessary. The first thing that hits you should be the increased level of fixed assets. It looks as though they have bought a significant amount of fixed assets. Here you hope that the assets are productive plant and equipment, rather than a new BMW or a head office.

In a more scientific vein, calculate the working capital – namely stock, debtor and creditor days. You should come up with figures that look like these.

Stock days	82 days	84 days	83 days
Debtor days	75 days	73 days	77 days
Creditor days	<u>50</u> days	<u>62</u> days	<u>76</u> days
<i>Sub-total</i>	<u><u>107</u></u> days	<u><u>95</u></u> days	<u><u>84</u></u> days

What this shows is a pretty consistent picture on the stock and debtor days – although consistently longer than you might think. What is really playing havoc with the working capital is the fact that he is paying his trade creditors more quickly. Cynically, this only happens for one of two reasons. Either he is paying them sooner because he is taking advantage of an early settlement discount, or he is being squeezed to simply pay sooner. We could easily discount the first theory, since the gross margin worsening does not indicate that lower cost of sales have been negotiated.

We can also see quite clearly that the bank overdraft has simply got out of hand. Perhaps because of this there is greater reliance on leasing at the end of the year. Things do not look good, and we have been able to tell all of this by some very simple analysis.

It is important to stress here that whilst the profit and loss account may not have looked too bad, the balance sheet is not very encouraging. Bearing in mind the fact that we tend to be blind to the balance sheet, and focus on the profit and loss to excess, we might not have spotted that this business is in real trouble.

It is in fact guilty of overtrading, a condition where the following three things happen:

- Low gross margin.
- High working capital.
- Growth.

We will examine the exact relationship later, but for the moment we will use this example to build up the third financial statement (the one we have not yet seen): the Cash Flow Statement (FRS1).

The best way to see an FRS1 cash flow statement is to work through one. What you see overleaf is the FRS1 for this business already calculated.

RICHARD LIMITED*Cash Flow Analysis*

Operating profit	178	
Increase in stocks	(101)	
Increase in debtors	(145)	
Decrease in creditors	(6)	
	<hr/>	(74)
Returns on inv. & ser of finance		
Interest payable	(32)	
Dividends paid	(40)	
	<hr/>	(72)
Taxation		
Corporation tax paid		(52)
Investing activities		
Purchase of fixed assets		(142)
Cash flow before financing		<hr/> (340)
Financing		
Increase in overdraft	300	
Increase in long term creditors	2	
Increase in finance leases	36	
	<hr/>	338
Cash flow after financing		<hr/> <hr/> (2)
Opening cash balance	33	
Closing cash balance	31	
Movement in cash balances		<hr/> <hr/> (2)

Make sure that you have got one finger in the profit and loss account and balance sheet, and begin to tick up the cash flow statement above. First, find where the £178 in the first line comes from. The answer is the operating profit in the

profit and loss account. Do not forget that this is the profit as measured on the accruals basis, and yet what we want is to turn it into cash from profits – in other words we want to strip out the accruals. We do this by adjusting for the next three lines, the first of which is called Increase in stocks.

Where has this figure come from? You should be able to calculate it from the difference between the 1996 and 1997 balance sheet stock figures. Stock has simply gone up by £101 from 1996 to 1997, and this of course must mean that there is more of the business's money tied up in a larger stock pile.

Working capital can often be thought of as a sponge – if you leave it uncontrolled it will suck up any spare cash into stock and debtors. To control working capital you need to squeeze the sponge, and you will get cash in exchange for lower stock and debtors.

Sadly, in this instance, the increase in stock means a use of cash, which is why the figure of £101 has brackets around it.

What about the next figure – the increase in debtors? Well, exactly the same logic applies here, in as much as larger debtors of £145 must mean less cash in the bank account. So another bracketed figure appears, and we have already trashed our profit figure of £178. This business is cash negative at the operating level. It needs money shovelling into it to feed the working capital monster every time sales increase.

But we haven't finished yet, as he has even got his creditors going the wrong way. Normally in an expanding business you might expect to lean on your suppliers a bit more, but in this case the reverse has happened. Another cash negative hits the cash flow statement.

The subtotal of £74 is the cash generated from operations, and is the most important figure in the cash flow statement. This business, whilst growing, will never pay its way in cash terms. That puts the dividend and purchase of fixed

assets into a slightly different light now, doesn't it? Perhaps they weren't such clever moves, after all.

Completing the cash flow statement, the next section with interest and dividends is quite simple, albeit another net cash drain.

The taxation figure paid in 1997 is actually 1996's liability: tax is paid nine months after the company's accounting year end.

The fixed asset addition of £142 is simply the difference between the fixed asset figures in the balance sheet.

All of the above items add up to give a total cash bleed of £340 for the year in question – quite a different feel from the acceptable profit and loss account we saw earlier. So how has he managed to keep the ship afloat?

There are three sources of funding that have been taken advantage of. The most significant is the bank overdraft, which has increased by some £300. There are short and long-term creditors (lease and hire purchase liabilities) which have increased by £2 and £36. These sources give a total of £338, which very nearly goes to offset the cash bleed of £340 – but not quite.

The final point of a cash flow statement is that the net cash worsening of £2 should be the difference between the cash figure at 1996 compared to 1997 – and it is! The joy of a cash flow statement is that everything adds up and is provable.

Now, although most people say 'Yes' when asked if they know the difference between cash and profits, actually doing a cash flow statement is extremely instructive. This business had the plug pulled on it by the bank, which is hardly surprising since the directors were clearly not in control of it. That might seem a little harsh to those profit and loss maniacs out there who see rising sales, market share and so on – but who cannot see the impact of it all on the balance sheet.

A calculation

Here is possibly one of the most useful calculations that you will come across. It generally works in most businesses, but be aware that its overall accuracy is only as good as the underlying accounts themselves.

Just calculate each item of working capital – stock, debtors and creditors, as a percentage of sales. You will get something like this:

Stock as % sales	18.2%	£654
Debtors as % sales	20.6%	£741
Creditors as % sales	<u>(11.1%)</u>	<u>(£401)</u>
<i>Net working assets</i>	27.6%	£994

This figure of net working assets is simply the amount of extra working capital needed for every extra pound of sales – in this case the figure is 28p for every extra pound of sales.

The theory then goes on to say that whilst we need 28p extra for every £1 of sales, we actually get something towards that from the gross margin. In this year the gross margin was 19%, which is not enough to keep the fires stoked (we need 28%). The result is that this business is cash negative to the tune of 9p in the £1 (28% less 19% = 9%), which partially explains the poor cash performance this year.

To turn the business into a cash cow, however, need not be all that difficult: reduce stock a little, reduce debtors a little, lean on suppliers a little and increase the gross margin a little! Simple, really!

This little calculation is a sort of quick alternative to a cash flow statement, and one of its great uses is that it can be used proactively. You can estimate, for example, the additional funding needed if incremental business were to be taken on.

Best Practice



Break-even

Although break-even is covered later in this book, before you move on from this example it might be useful to calculate a break-even point and see how it is moving.

A break-even is simply the fixed costs divided by the gross margin. For this example (as we do generally when just presented with a set of financial accounts) we assume the distribution and administration costs to be fixed.

With fixed costs of £522 (£162 plus £360), we now divide by the gross margin of 19%. This gives a break-even sales point of £2,685. Since sales are running at £3,600 we are clearly making a profit. We normally express our comfort with the situation as calculated by the 'margin of safety'. This is the amount we are actually trading at, expressed as a percentage over the break-even.

In 1997 we would be trading at £915 (£3,600 over £2,685) above the break-even of £2,685. This is equal to a margin of safety of 34% over break-even sales. This is worrying, since in the previous year we had been trading at a margin of safety of 62%.