Chapter 12
Ratio analysis

Accounting ratios allow managers and other stakeholder groups to make judgements on how efficiently a business is being run. Profit is the main indicator of how well a business is performing.

Gross profit explained

Gross profit is an indicator of how efficient the business is at making and selling its products. However, the figure for gross profit on its own does not help us judge the level of efficiency: after all, a large business is likely to have a much higher gross profit figure than a small business. Consequently, a calculation is used to help us judge the efficiency of the business. This calculation, known as an accounting ratio, is called the gross profit margin (GPM). The better the performance the higher the gross profit margin percentage will be.

Calculating the gross profit margin (GPM)

To calculate the gross profit margin two figures are needed – these are gross profit and sales (also known as sales turnover or sales revenue).

The formula is quite straightforward:

$$\frac{\text{Gross profit}}{\text{Sales}} \times \frac{100}{1} = \text{GPM\%}$$

Example: if we had a gross profit of £438 700 and sales of £956 500:

$$\frac{438\ 700}{956\ 500} \times \frac{100}{1} = 45.8\%$$

Commenting on the gross profit margin

When the GPM has been calculated, a business or stakeholder cannot just say if it is good (high) or bad (low) without considering the type of business involved.

Variations in the GPM between businesses are caused by both internal and external factors. Internal factors include the size of the business, the quality of stock control, management of expenses etc. External factors include the level of interest rates, the type of industry the business operates in and the target market. The influence of both sets of factors becomes clearer if we look at two examples.

A large supermarket chain will have a relatively low gross profit margin. It may buy a can of beans from the manufacturer for 20p and sell it at 25p. Many supermarket chains have GPMs of around 18%. However, a corner shop may have a relatively high gross profit margin: it may buy a can of beans from the wholesaler at 25p and sell it at 40p. The supermarket can trade with a lower GPM because it can spread its other costs (expenses) over a large number of sales. On the other hand, the corner shop will have relatively high expenses in relation to sales and these have to be covered by a high GPM.

Between different industries GPM can vary a great deal. Jewellers may have a very high GPM (60–80%). They may sell their goods at two or three times the price they paid their supplier. A dairy farmer, however, might find that the price they receive for their milk is little more than the cost of producing it.

Nonetheless, even with these influences on GPM, a judgement can still be made. Low GPM businesses may include supermarkets, manufacturers of mass production goods and food manufacturers; whilst high GPM businesses will include restaurants and retailers of upmarket goods. Therefore, looking at the accounts of a fast-food outlet the GPM is 25% – this is likely to be poor, but if the accounts relate to a manufacturer of tinned vegetables, this level of GPM may be totally acceptable. Overall, an improving ratio over two years' accounts is always positive and the higher the ratio, the better.

Net profit explained

Net profit is an indicator of how profitable the business is overall: this is because all the business's revenues and expenses in its calculation are included. Like the figure for gross profit, net profit on its own does not help judge the level of efficiency – after all, a large business is likely to have a much higher net profit figure than a small business. However, the small one could manage its expenses more efficiently. A second calculation is used to help judge the efficiency of the business. This calculation, again known as an accounting ratio, is called the net profit margin.

Calculating the net profit margin (NPM)

To calculate the net profit margin two figures are needed – these are net profit and sales. The following formula is used:

$$\frac{\text{Net profit}}{\text{Sales}} \times \frac{100}{1} = \text{NPM\%}$$

Example: if we had a net profit of £136 500 and sales of £956 500:

$$\frac{136\ 500}{956\ 500} \times \frac{100}{1} = 14.2\%$$

Commenting on the net profit margin

When the NPM has been calculated, commenting and judging whether it is good (high) or bad (low) is easier than when examining the GPM. The type of business involved must still be considered, but the NPM does not vary by quite as much as the GPM over different industries and sizes of business.

A business with a high GPM often has proportionately higher expenses, whilst a business with a low GPM often has proportionately lower expenses. Knowing what to expect will help to make a critical comment on the NPM and, importantly, the difference between the NPM and the GPM. One important factor that will lower the NPM is if the business is relatively new. A newly established business, in its first years of trading, may have high expenses as it tries to establish itself. A good example of this would be high expenditure on advertising. As a result of these relatively high expenses, a new business could have a low NPM; but this low NPM may not necessarily indicate problems.

How do we judge a good or bad NPM and how do we comment?

Perhaps the easiest way to judge NPM is to construct bands of performance. Therefore:

- A NPM of 18% + may be regarded as good, indicating effective business management of costs and expenses.
- A NPM of 10–17%, might be viewed as satisfactory, but cost or expenses management could be improved.
- A NPM of less than 10% could be regarded as poor, indicating that there are real opportunities for improving cost and expenses management.

Remember that when commenting on accounts an allowance for the type and age of business should be considered. Walmart, the world's largest retailer, has one of the lowest NPMs in the business, at below 3%! On the other hand, Microsoft has a NPM of around 48%.

If the figures that have been calculated do seem low, businesses and stakeholders should look for the main causes of poor performance. Are costs of sales high? This would lead to a low GPM, which in turn may lead to a low NPM. By working through the profit and loss account, individual costs and expenses can be analysed to see what the cause of the low NPM is.

When assessing the performance of the profitability ratios it is important to make comparisons with other businesses in the same industry as well as making comparisons over time.

By comparing with similar size businesses in the same industry the profitability of the business can be compared 'like with like'. The businesses would be expected to have similar features and therefore the comparison is more valid when judging the significance of their gross and net profit ratios.

When evaluating the GPM and the NPM it is important to compare these over time. This can be by just comparing the business's performance over, for example, a five-year period, or even better, comparing the business against similar businesses in the same industry over the five years.

One year's figures may be misleading and not a true reflection of the profitability of the business over a longer period of time. By analysing data over a longer period of time patterns can be identified and a more accurate evaluation of the profitability of the business may be carried out.

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Gross and net profit margins
http://bit.ly/1JWoGDw

Discussion themes
What is profit? MoneyWeek investment tutorials – includes GPM and NPM. https://www.youtube.com/watch?v=IQuYnADhuwo
Explain the purpose of calculating profit ratios.
'A low NPM is not always an indicator of poor performance.' Discuss this statement.
'Profitability ratios are the only way to judge business performance.' Do you agree with this statement?