

Ratio Analysis—Profitability Ratios

Specification requirement—Profitability ratios: net profit margin, gross profit margin, return on capital employed. The calculation,, interpretation and importance of these ratios.

Gross Profit Explained.

Gross Profit is an indicator of how efficient the firm is at making and selling it's product. But the figure for Gross Profit on its own does not help us judge the level of efficiency, after all a large firm is likely to have a much higher Gross Profit figure than a small firm. But the small firm could be better run, have less stock damaged, and buy it's raw materials cheaper. Because of these factors we have to use a calculation to help us judge the efficiency of the business. This calculation, known as an accounting ratio, is called the **Gross Profit Margin**.

Calculating the Gross Profit Margin. (GPM)

To calculate Gross Profit Margin we need 2 figures, these are Gross Profit, and Sales.

The formula we use is quite straightforward, it is:

Example

$$\frac{\text{Gross Profit}}{\text{Sales}} = \text{GPM \%}$$

Gross Profit £438,700 and Sales £956,500

$$\frac{438,700}{956,500} = 45.8 \%$$

Commenting on the Gross Profit Margin.

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

Variations in GPM between businesses are caused by both internal and external factors. Internal factors include of size of firm, quality of stock control, management of expenses etc. External factors include, interest rates, type of industry the firm 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 GPM's of around 18%, whilst 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. A jeweller will have a very high GPM, (60-80%). He may sell his goods at 2 or 3 times the price he paid, on the other hand a dairy farmer might find that the price he receives for his milk is little more than the cost of producing it. But even given these influ-

ences on *GPM*, we should still be able to make a judgement.

Low *GPM* businesses may include supermarkets, manufacturers of mass production goods and food manufacturers, whilst high *GPM* businesses will include restaurants and retailers of up market goods.

So if we are looking at the accounts of a fast food outlet and the *GPM* is 25%, this is poor, but if the accounts relate to a manufacturer of tinned carrots this level of *GPM* may be a totally acceptable.

Net Profit Explained.

Net Profit is an indicator of how efficient the firm is overall, this is because we include all the firms revenues and expenses in its calculation. But like the figure for Gross Profit, Net Profit on its own does not help us judge the level of efficiency, after all a large firm is likely to have a much higher Net Profit figure than a small firm. But the small one could be better run, have less stock damaged, and buy its raw materials cheaper, and manage its expenses better. Because of these factors we have to use a second calculation to help us judge the efficiency of the business. This calculation, again known as an accounting ratio is called (unsurprisingly) the **Net Profit Margin**.

Calculating the Net Profit Margin. (NPM)

To calculate Net Profit Margin we need 2 figures, these are Net Profit, and Sales. We use the formula:

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

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 we have calculated NPM, commenting and judging whether it is good (high) or bad (low), is easier than when examining *GPM*. We must still considering the type of business involved, but NPM does not vary by quite as much as *GPM* over different industries and sizes of business. This is as a result of these differences in *GPM* being evened out by the differences in expenses in different industries.

A firm with a high *GPM* often has proportionately high expenses, whilst a firm with a low *GPM* often has proportionately low expenses. Knowing what to expect will help you make a critical comment on NPM, and importantly the difference between NPM and *GPM*. One important factor that will lower NPM is if the business is relatively new. A newly started 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. Because of these relatively high expenses, a new business could have a low NPM, but this low NPM may not necessarily indicate problems.

So 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. So:

NPM of 18% + is good, indicating effective business management of costs and expenses.

NPM of 10% - 17%, is satisfactory, but cost or expenses management could be improved.

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 you comment on accounts you should allow for the type and age of business you are being asked about.

Unless you are looking at a very low NPM do not be overly critical. WalMart, the worlds largest retailer has one of the lowest NPM's in the business, at below 3%! On the other hand Microsoft has a net profit margin of around 48%.

If the figures you have calculated do seem low you should look for the main causes of poor performance. Are costs of sales high? This would lead to a low GPM, which in turn will lead to a low NPM. Work your way down the Profit and Loss Account and see which type of expense stands out.

An comment on GPM and NPM might read, 'For the firm, both GPM and NPM are good. At 16.2% NPM is high, indicating that the firm manages its costs and expenses well. The figure for NPM is higher than the previous year, showing a positive trend. The figures for both GPM and NPM indicate a successful business.'

When answering ensure that you use the figures you have calculated, and comment on

each of them. The example above does not include specific figures for and comment on GPM, and also ignores external factors, that might influence your analysis of the firms performance. So you could add 'although figures seem high, a full evaluation would depend on comparison with similar companies'.

Return on Capital Employed (ROCE).

The Return on Capital Employed figure measures how effectively the capital invested in the business is being used to create profits. As a guide the ROCE should be at least 5% above the cost of borrowing, but even at this level a downturn in performance could mean that borrowing to fund an investment costs more than the return produced from the investment - and this has to be regarded as poor management.

Many firms have internal targets for their own ROCE figure, and do not invest in projects that are predicted to give a return of below this figure. A typical target figure for ROCE may be 12 or 15%. ROCE does differ between industries, and often depends on the levels of capital investment required. Typically International Airlines such as BA have a low ROCE ratio perhaps 6 or 7%, whilst some large software companies have ROCE ratios of 20%. Of course as profits fluctuate then ROCE will alter in line with these changes.

Calculating ROCE

There are a number of different definitions of what capital employed is but in your calculations at A Level the Capital Employed figure should include Reserves, Shareholders Funds, and Long Term Borrowing of any kind.

The return figure is based on the profitability of the firm. The best figure to use in your calculations for this is 'Profit before Interest and Taxation'. If this figure is not available look for a profit figure that is close in identity to Net Profit (Net Profit may be given). In recent WJEC exams the figure to use has been titled, 'Net Profit before Tax', and also 'Net Profit'.

$$\frac{\text{Net Profit before Tax}}{\text{Capital Employed}} \times \frac{100}{1} = \text{ROCE\%}$$

So if Capital Employed is £1,456,000 and Profit before taxation is £236,000.

$$\frac{236,000}{1,456,000} \times \frac{100}{1} = 16.2\%$$

In this case we have a ROCE of 16.2%, which is much higher than any return from leaving the money in a bank, and indicates an effective investment of capital employed, Below 7% or 8% would be seen as poor—so money invested has not produced a good return.. 20% plus has to be regarded as very good.

Notes