

Ratio analysis

Profitability ratios

These ratios will help you to evaluate your business profit performance for a particular period. In the process you will assess the returns generated on sales, total assets and capital.

The following are the most commonly used profitability ratios.

- Gross profit margin
- Net profit margin
- Return on total assets
- Return on equity

Gross profit margin

The gross profit is the sales less cost of goods sold. These figures are contained in your profit and loss statement.

$$\text{Gross profit margin} = (\text{Gross profit} / \text{Sales}) \times 100$$

The ratio of gross profit to sales should be relatively constant for a business and the industry, irrespective of fluctuations in the net profit ratio. If your gross profit margin has been decreasing over time, it may mean that your stock control needs to be examined and improved, or that your selling prices are not increasing in line with the costs of the goods you sell.

Net profit margin

This ratio represents how much of each sales dollar is left for the owner after all costs have been met. It is calculated as follows.

$$\text{Net profit margin} = (\text{Net profit} / \text{Sales}) \times 100$$

The figure usually used for comparison purposes is the net operating profit. This is operating profit after income tax, but excluding extraordinary items.

Return on total assets

This ratio measures how effectively your business uses its assets to produce more income, or the average rate of return earned by the assets of your business over a set period.

This ratio is measured by dividing operating profit after tax by average total assets.

$$\text{Return on total assets} = \text{Operating profit after income tax} / \text{Average total assets}$$

A high return on total assets can be a result of a high profit margin, a rapid turnover of assets, or a combination of both.

Return on equity

The return on equity ratio measures the rate of return on shareholders' or owners' investments. It assesses the net profit performance against the money the owners have invested in the business. This ratio can be calculated using the following formula.

$$\text{Return on equity} = \text{Operating profit after income tax} / \text{Owner's equity}$$

The rate of return can be compared to what you would have earned had you invested your capital in the share market or in a bank account during the same period. If your business has a high return on assets or uses debt financing extensively, the rate of return is likely to be higher.

Also note that for companies the percentage of return on equity may in reality be higher than what you have calculated, as the operating profit would take into account any salaries paid to yourself or other owner-employees. Your business stock valuation policy, asset valuation policy and treatment of borderline expense/capital items will also have an impact on this ratio.

Liquidity ratios

These ratios show the ability of your business to quickly generate the cash needed to pay your bills. They are important to your business as they can point to cash deficiencies, which if not rectified quickly could impact on your profitability, and in severe cases could send your business bankrupt. Liquidity ratios are sometimes called working capital ratios because that is, in effect, what they measure. The two ratios most commonly analysed are:

- the current asset ratio
- the quick asset ratio or 'acid test'.

The current asset ratio

This ratio measures the ability of your business to generate cash to meet its short term obligations. A decline in the current ratio could be due to an increase in short term debt, a decrease in current assets, or a combination of both. This ratio is calculated by dividing current assets by current liabilities and expressing the answer as a ratio, eg 2:1.

$$\text{Current asset ratio} = \text{Current assets} / \text{Current liabilities}$$

A decline in this ratio means a reduced ability to generate cash. By paying off some current liabilities you can improve your current asset ratio.

The quick asset ratio or 'acid test'

This ratio examines the ability of your business to quickly meet short-term debts. The difference between the quick asset ratio and the current asset ratio is that the quick asset ratio subtracts stock from current assets and compares the resulting figure to current liabilities. The formula for this ratio is as follows.

$$\text{Quick asset ratio} = \text{Current assets} - \text{Stock} / \text{Current liabilities}$$

The reason that stock is not included with the current assets is that if the business had to quickly liquidate stock, it is unlikely to realise the value of stock stated on the balance sheet. Similarly, the current liabilities included in this ratio should only be those items requiring payment in the short-term. This would include trade creditors and accrued expenses, but it would not include a bank overdraft unless it is likely to be called at short notice.

Other ratios

Gross Profit

$$\text{Gross Profit} = \text{Sales} - \text{COGS (Cost of goods sold)}$$

Cost of Goods Sold (COGS)

$$\text{COGS} = \text{Opening stock} + \text{purchases} - \text{closing stock.}$$

Average Stock

$$\text{Average Stock} = (\text{Opening} + \text{Closing Stock}) / 2$$

Stock turn – how many times does the entire inventory sell per year.

$$\text{Stock Turn} = \text{COGS} / \text{Average Stock}$$

OR

$$\text{Stock Turn} = \text{Annual sales} / \text{Average monthly inventory at retail value}$$

Days Stock on Hand – inverse to stock turn, how many days stock is on hand.

$$\text{Days Stock on Hand} = (\text{Average Stock} / \text{COGS}) \times 365 \text{ days}$$

Debtor Days Outstanding – how quickly we collect our debts

$$\text{Debtor days Outstanding} = (\text{Outstanding Debtors \$} / \text{Monthly Sales \$}) \times 30$$