

AN INTRODUCTION TO UNDERSTANDING FINANCIAL RATIOS

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Introduction

Retaining effective financial control requires that businesses prepare three financial statements (profit and loss (P&L) account, balance sheet and cash flow statement), at least monthly. Between them, they will tell a business and its advisers everything they need to know about its financial position.

For many people, the three financial statements can be daunting, and they find it difficult to derive a full picture of how the business is performing. Calculating a few simple financial ratios, however, can help to assess how well a business is doing and give an early warning of financial problems:

- Ratios can be used to set targets, as well as providing early warning signs of issues that need attention.
- Ratios for your business can be compared with the same ratios for other businesses operating in a similar sector, giving an idea of relative performance. Ratios are published for many business sectors (sometimes referred to as 'industry norms'), which can be used as a comparison.

This factsheet introduces the key financial ratios, explains how to calculate them and suggests typical values for a healthy business. It also includes hints and tips and sources of further information.

While not essential, some familiarity with the three financial statements will make understanding this factsheet easier.

Ratios

A ratio is simply a relationship between two numbers and is normally expressed numerically (though sometimes may be expressed as a percentage). Within a business, ratios are generally used to assess the following important financial indicators:

- Profitability - whether the business is a good investment.
- Liquidity - the amount of working capital that is available.
- Solvency - how easily the business can pay its debts as they fall due.
- Efficiency - how effective the management and business processes are.

The information required to calculate ratios is derived from the business' accounts. Most ratios require information from the balance sheet, but some require information from your P&L account or cash flow statement.

The ratios explained in this factsheet are:

Profitability ratios

- Gross profit margin
- Net profit margin
- Return on capital employed
- Return on equity

Liquidity ratios

- Current ratio
- Quick ratio
- Defensive interval

Solvency ratios

- Gearing
- Interest cover

Efficiency ratios

- Debtors' turnover ratio
- Average collection periods
- Creditors' turnover ratio
- Stock turnover ratio
- Asset turn

Profitability ratios

The most important objectives for a business, and arguably therefore the most important ratios, are those concerned with profitability.

Gross profit margin

The gross profit margin is simply the gross profit expressed as a percentage of sales:

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

A business needs to ensure that its gross profit (that is, the sales income less the direct costs) is sufficient to cover all its overhead costs and to generate a net profit - to distribute to the owners, to retain within the business to reinvest, to provide additional working capital and to repay outstanding loans.

It is sensible, therefore, to set targets for gross profit in absolute terms, and also as a margin. This is a good figure to compare with other businesses in the same sector.

If your gross profit margin starts to drop, it might mean you are paying too much for raw materials, or you may have had to discount your sales price too much to achieve sales, or the scrap rate (waste rate) might be increasing.

Gross profit margins vary from sector to sector. Examples quoted by Biz/ed, (the website for students and educators in accounting and business studies, which you can find at www.bized.co.uk/compact/ratios/profit3.htm) show typical gross profit margin levels for the leisure and hotel sector at 10%, pizza restaurants at 48% and accounting software at 90%. This site also shows examples of other ratios cited below.

Net profit margin

The net profit in a business is what is left after all the costs (except interest and tax, neither of which are generally regarded as costs)

have been deducted. The net profit margin is the net profit (using profit before interest and tax - PBIT) expressed as a percentage of sales.

$$\text{Net profit margin} = \frac{\text{Profit before interest and tax}}{\text{Sales}} \times 100\%$$

When comparing net profit margins you need to be aware that businesses (ie sole traders and partnerships) show net profit before drawings, whereas companies show net profits after directors' salaries. To make a valid comparison you must therefore either deduct drawings or add back directors' salaries to the PBIT figure and use this figure to calculate the ratio on the same basis.

Obtaining published accounts for your competitors can reveal a great deal about their performance. While it is often difficult to determine their gross profit margin, it is relatively easy to discover their net profit margin. You can use this to benchmark your performance. It should be noted that bankers may prefer to use profit after tax in calculating this ratio. Remember, therefore, that it is important to know exactly which figures have been used if you expect to compare ratios from different sources.

Return on capital employed

Some financiers will want to know the return on the capital employed - and this will be of interest to the owners or shareholders as well. This shows the ability of the business to generate returns on funds invested and will give some indication of the element of risk - usually the higher the risk, the higher the return. Return on capital can be compared with interest rates for investments where there is very low risk - for example, if the same sum of money had been put in a building society or invested on the stock market.

$$\text{Return on capital employed} = \frac{\text{Profit before interest and tax}}{\text{Capital employed}} \times 100\%$$

Capital employed is found on the balance sheet, though may require the addition of some individual entries. It is usually defined as equity plus long-term debt. However, for a small business where the proportion of short-term debt is high, the figure for capital employed should include all finance - that is, equity plus long-term debt plus short-term debt.

Remember that a balance sheet is like a snapshot of the financial position of a business at a particular point in time, so use the average for the period to which the PBIT relates. To calculate the average for the period you need to add the relevant figures from the opening and closing balance sheets and divide by 2.

A balance sheet shows all the assets of a business (anything owned by or owed to it), less its liabilities (all the money owed by the business to its creditors). The resulting net asset value will always be equal to the capital and reserves of the business, plus the net profit that the business has accumulated from its trading activities. Published accounts always show the previous period's figures for comparison. If for any reason this is not possible, using the figure on the available balance sheet will give an approximation.

Accountants and banks, depending on their preferences, may look at return on equity (RoE), return on capital employed (RoCE), return on invested capital (RoIC), or return on total assets (RoTA). While these are all slightly different ratios, they are all, in some way, looking at the return on assets. It is important to be clear which figures have been used to derive the ratio, and to be consistent, or comparisons will be meaningless.

Return on equity

The financial return to the owners can be determined by looking at the RoE.

$$\text{Return on equity} = \frac{\text{Profit after tax}}{\text{Net worth}} \times 100\%$$

Consideration of RoE gives the owners the opportunity to compare their return with what they might achieve if they invested their money elsewhere, so it is normal to use profit after tax (PAT). The net worth

is capital contributed by the shareholders together with the retained earnings.

Liquidity ratios

A business should always have enough current assets (such as stock, work in progress, debtors, cash in the bank and so on) to cover current liabilities (such as bank overdraft, creditors and so on). Liquidity ratios indicate the ability of a business to meet liabilities with the assets available.

Current ratio

The current ratio shows the relationship of current assets to current liabilities.

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

This ratio should normally be between 1.5 and 2. Some people argue that the current ratio should be at least 2, on the basis that half the assets might be stock. A ratio of less than 1 (that is, where your current liabilities exceed your current assets) could mean that you are unable to meet debts as they fall due, in which case you are insolvent. A high current ratio could indicate that too much money is tied up in current assets, for example giving customers too much credit.

Quick ratio

A stricter test of liquidity is the quick ratio, also known as the 'acid test'.

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

This ratio measures your ability to meet short-term liabilities from liquid assets such as cash. Some current assets, such as work in progress and stock, may be difficult to turn quickly into cash. Deducting these from the current assets gives the quick ratio.

The quick ratio should normally be around 0.7-1. To be absolutely safe, it should be at least 1, which indicates that quick assets exceed current liabilities.

Defensive interval

Some businesses, and banks in particular, find it helpful to calculate the defensive interval. This is the best measure of impending insolvency and shows the number of days a business can exist if no more cash flows into it.

$$\text{Defensive interval (days)} = \frac{\text{Current assets} - \text{stock}}{\text{Daily operating expenses}}$$

The daily operating expenses are best determined from the cash flow statement:

- Take the total payments for the year and divide by 365 - as you are interested in how long the business can survive based on its need to spend cash. If the cash flow figure is not easily available, you can make an approximation by taking figures from the P&L account.
- Take total expenditure.
- Add interest.
- Deduct depreciation.
- Make an attempt at adding net loan repayments estimated from the balance sheet.

As a guide, the defensive interval should be 30-90 days, though this depends on your sector.

Solvency ratios

If the net worth of a business becomes negative - that is, the total liabilities exceed total assets - the business has become insolvent. In

other words, if the business closed down it would not be possible to repay all the people who are owed money. Allowing a limited company to become insolvent is an offence (under the Companies Act 2006 and the Insolvency Act 1986, as amended, and can lead to proceedings being taken under the Company Directors Disqualification Act 1986) so you should regularly review the figures if the net worth of the business is low.

Gearing

One ratio that gives an indication of solvency is the gearing. Many businesses, as they grow larger, set a gearing objective and the banks aim to keep the gearing low in businesses to which they lend.

$$\text{Gearing} = \frac{\text{Total debt}}{\text{Capital employed}}$$

Gearing is normally defined as the ratio of debt (ie loans from all sources including debentures, term loans and overdraft) to the capital employed. The higher the proportion of loan finance, the higher the gearing.

Although capital employed is a balance sheet figure, it is the gearing at a specific time that is important. You should, therefore, simply take the assets and liability figures from the most recent balance sheet.

Equity investors will want gearing to be as high as possible to benefit from the leverage effect of the return on capital employed being higher than the cost of borrowing money. Conversely lenders, worried about the opposite leverage effect and the ability of a business to pay its interest charges, will want the gearing as low as possible.

Ideally, the gearing should not be greater than 50%, although it often is, particularly for new, small businesses. It may be worth noting that banks frequently include the overdraft facility rather than the actual level of overdraft being used when they calculate gearing, which will have the effect of making the gearing appear higher.

Interest cover

In addition to watching the gearing, banks will also want to be satisfied that you will be able to pay the interest due on your loans. They will pay particular attention to how many times the profit exceeds or covers the interest.

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

A business with low interest cover may be unable to meet future payments if profits were to fall or interest rates were to rise. Interest cover of more than 4 is very good, but less than 2 is regarded as rather low.

Efficiency ratios

Efficiency ratios provide a measure of how much working capital is tied up in the business, indicate how quickly a business collects outstanding debts and pays creditors, and show the effectiveness of the business in 'sweating' its assets (or maximising the profit generated by its assets). They are one measure of the effectiveness of the management processes.

Debtors' turnover ratio

Businesses will be particularly keen to monitor how quickly their debtors pay them.

$$\text{Debtors' turnover ratio} = \frac{\text{Sales}}{\text{Average debtors (excl. VAT)}}$$

As with other balance sheet items, the ideal is to use the average debtors for the period. Remember that the sales figure on the P&L account is quoted exclusive of VAT, so the figure used for average debtors also needs to be without VAT. It is quoted inclusive of VAT on balance sheets because the VAT is part of the money owed to you, so to get the net debtor figure, divide by 1.175 if the VAT rate charged is 17.5%.

If you don't have a debtors figure for the start of the period, an approximation is given by dividing the sales by the debtors at the end of the period.

Average collection periods

Knowing how long it takes to collect monies owed is helpful, particularly if you have a target of, say, 30 days. Dividing the debtors' turnover ratio into the days of the year gives the average collection period in days.

$$\text{Average collection period} = \frac{365 \times \text{debtors (excl. VAT)}}{\text{Sales}}$$

Tight credit control is essential in any business. The collection period should be kept as short as possible. Many businesses aim to operate on 30 days, but more typically will achieve between 45 to 60 days.

Creditors' turnover ratio

Monitoring how long it takes to pay suppliers is as important as knowing how long customers take to pay. If suppliers have to wait too long, they may withdraw credit facilities.

$$\text{Creditors' turnover ratio} = \frac{\text{Cost of sales}}{\text{Average creditors (excl. VAT)}}$$

$$\text{Average payment period} = \frac{365 \times \text{creditors (excl. VAT)}}{\text{Cost of sales}}$$

It is normal to use cost of sales - that is, the direct costs - in calculating the average payment period when comparing the performance of different businesses. If that figure is not easily available, as it may not be for competitors, it is possible to approximate by using the sales figure.

Stock turnover ratio

The level of stock in a business can change for all sorts of reasons. Stock will increase in times of expansion and decrease in times of contraction.

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

$$\text{Average stockholding period} = \frac{365 \times \text{stock}}{\text{Cost of sales}}$$

Some businesses, to keep their workforce employed and to even out production, may manufacture for stock, even if they haven't got firm orders. The danger here is that too much working capital is tied up in stock, which then cannot be sold.

For some businesses, such as wholesalers and most retailers, a high stock turnover ratio is essential in order to make any profit. A low stock turnover could indicate the presence of slow-moving stock, which may be a problem that needs to be addressed.

The ideal stock turnover ratio is entirely dependent on the nature of the business. A fruit shop, for example, would expect an average stockholding period of no more than a couple of days - otherwise the fruit will deteriorate and sales will be lost. A bookshop, on the other hand, might have a stock turnover ratio of just 3-4 and a holding period of around 90-120 days. This is because it needs to carry a high level of stock in order to give sufficient choice to its customers. Holding stock for too long, however, has serious implications for the amount of money that the business has tied up in stock.

Asset turn

A measure of how hard the assets of the business are being made to work is given by the asset turn or capital turnover. Ideally, use the average total assets for the period when calculating asset turn.

$$\text{Asset turnover ratio} = \frac{\text{Sales}}{\text{Average total assets}}$$

Some accountants use net assets when calculating this ratio and some use current assets, so take particular care when other people are quoting asset turn. A profitable business would typically have an asset turn of 1.3-1.5. Note that net profit margin x asset turn = return on total assets, so a net profit margin of around 10%, combined with an asset turn of 1.4, would give a return on total assets of 14%.

Hints and tips

- Remember, an understanding of all the financial statements is important for maintaining effective control of a business.
- Using ratios to set targets and then to monitor performance will assist in determining the financial position of a business.
- Ratios can be used to monitor whether the business is on target and are also useful in making comparisons with competitors and with previous performance.
- Not every business will wish to use all the ratios described, and some may need others, but all will benefit from keeping a close eye on gross profit margin, net profit margin and quick ratio. If a business achieves these, it will almost certainly keep within its cost targets and achieve its return on capital targets.
- Monitoring payment days, collection days and stock turn will help to monitor working capital requirements which, in turn, will keep the business within its borrowing limits.

Further information

For practical start up and small business tips, ideas, know-how and news, go to:

Website: www.enterprisequest.com

To access hundreds of practical factsheets, market reports and small business guides, go to:

Website: www.scavenger.net

BIF 7 A Guide to Understanding Balance Sheets
BIF 8 A Guide to Understanding Profit and Loss Accounts
BIF 40 A Summary of Sources of Finance for Starting a Business
BIF 58 How to Forecast Cash Flow
BIF 67 A Guide to Establishing a Trade Credit Policy
BIF 115 A Guide to Recovering an Unpaid Debt
BIF 177 A Guide to Understanding Shareholdings in a Private Company
BIF 236 How to Forecast Sales
BIF 275 Choosing and Using Accounting Software
BIF 387 A Guide to Avoiding Cash Flow Problems

Books

'Key Management Ratios'
Ciaran Walsh
2008
Financial Times Prentice Hall

'Interpreting Company Reports and Accounts'
Geoffrey Holmes, Alan Sugden and Paul Gee
2008
Financial Times Prentice Hall

'Financial Ratios: How To Use Financial Ratios To Maximise Value and Success For Your Business'

Richard Bull
2007
CIMA Publishing

'Understanding Financial Ratios in Business'

Raghu Palat
2005
Jaico Publishing House

Useful contacts

The Institute of Chartered Accountants in England and Wales (ICAEW) is a membership organisation for accountants and has a searchable directory of accountants on its website.

Chartered Accountants' Hall
Moorgate Place
London
EC2R6EA
Tel: (020) 7920 8100
Website: www.icaew.co.uk

The Institute of Chartered Accountants of Scotland (ICAS) is a membership organisation for accountants in Scotland. It maintains a strict Code of Ethics for members and its website includes a directory of Chartered Accountants in Scotland.

CA House
21 Haymarket Yards
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EH12 5BH
Tel: (0131) 347 0100
Website: www.icas.org.uk

Chartered Accountants Ireland (Northern Ireland Office) represents accountants in Northern Ireland and offers a 'find a member/firm' facility on its website.

The Linenhall
32-38 Linenhall Street
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BT2 8BG
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Website: www.charteredaccountants.ie

The Association of Chartered Certified Accountants (ACCA) is a membership association for accountants and offers a 'find an accountant' facility on its website.

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for further information.

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