



# PROFIT

promoting regional opportunities  
for investment and trade

## **Financial statements**

FACTSHEET // JANUARY 2021

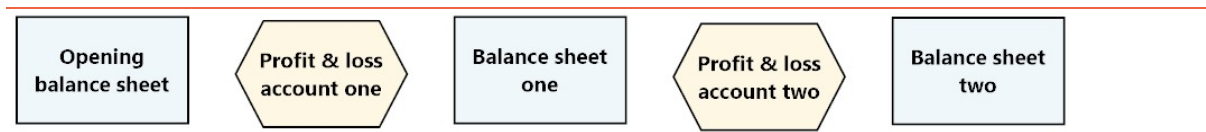
# Financial statements<sup>1</sup>

## 1. Introduction

There are three basic financial statements which describe the activities and financial state of any business and are used, though with slightly differing layout, all over the world:

- The *profit and loss account (P&L)* shows how a business performed over a specific period and reveals the total revenue and total expenditure related to that period.
- The *balance sheet* summarises the state of a business at a specific date. Balance sheets are linked by a P&L which covers the period between the two dates.
- The *cash flow statement* shows cash receipts to and cash payments from the business. A forecast of cash flow is one of the most important management accounting tools. It provides an estimate of the business's cash requirements for the next trading period. Note that receipts and payments are different to income and expenditure.

Figure 1: Financial statements



It is often helpful to split up funds within a business to show sources and applications. Sources show from where the money has come; applications show to where the money has gone. Until a few years ago, British balance sheets showed *finance* or *liabilities*, that is, sources on the left and *assets*, that is applications on the right. (The rest of Europe and the US reverse the columns to show sources on the right and applications on the left.) As you will see later, balance sheets now tend to be set out in a single column. It can, however, still be helpful to think about sources and applications in separate columns.

Source of funds	Application of funds

In double entry book-keeping every financial transaction requires two entries, normally with each entry in a different ledger and with the entries balancing one another. In other words, as will be illustrated shortly, the sources and applications need to balance.

<sup>1</sup> This factsheet is based on material originally written by David Irwin and published by Pitman Publishing as *Financial Control for Non-financial Managers*.

## 2. Profit and loss account

A profit & loss account (P&L) shows what happened in a business, in terms of sales, other income and expenditure, during a specific period. Businesses usually prepare a profit and loss account once each year, covering one year's activities, as part of their annual accounts. However, they can be prepared for any period of time.

The P&L shows:

- The revenue (that is, the income of the business) for the period.
- The expenditure for the period.
- How much profit there was (after deducting all the allowable expenses from the revenue)
- How the profit has been divided.

The largest and often the only source of funds to a business, on a regular basis, is the revenue produced by sales. A large proportion of the revenue is applied to cover the business's expenditure. Any balance is your profit.

Source of funds	Application of funds
Revenues	Expenses Profit

The sales figure reflects the revenue from actual sales of products or services during the period, excluding VAT if you are registered for VAT; it does not reflect the cash received from customers since some payments may still be outstanding or have been deposited in advance. (N.B. For businesses registered for VAT, the output tax (i.e. VAT on sales) is exactly equal to the input tax (i.e. tax on purchases) plus the tax handed over to the government. In other words, VAT in plus VAT out exactly balances with no benefit or deficit to the business.)

Businesses may not receive cash for their sales until 30 or 60 days or even longer after the sale is made. The sale is recorded immediately on the profit and loss account, although the cash is not available for use by the business until it is received. Expenditure on overheads is usually recorded immediately on the P&L, but it must be recorded for the period to which it relates. Business may not actually pay for goods or services until well after they have been provided. This is known as *accrued* expenditure. Some payments, however, may represent pre-payment. For example, rent or insurance, paid in advance, may partly relate to the current period and partly to the following period.

*Direct costs*, also called *cost of sales*, are the costs directly attributable to the production of the product or service. These will vary depending on the level of production but should reflect raw materials, direct labour and sub-contract costs in the product or service actually sold during the period. There may be stock purchased during the period and not consumed;

this will be shown on the balance sheet but not charged to the P&L. Similarly, stock may have been consumed during the period but purchased in an earlier period.

Suppose you purchase raw materials worth \$1,000. You now have stock of \$1,000 but you have not yet incurred expenditure which can be shown on the P&L. You then turn those raw materials into a finished product. As long as the products remain unsold, you will still have a stock value for them and do not show expenditure on the P&L. As soon as you sell a product, however, you immediately record both the income for the product and the raw material's cost. Subtracting the direct costs from the revenue gives the *gross profit*, also known as the *contribution*, because it contributes towards paying for the overheads (and once the overheads are all paid, it contributes to profit).

Source of funds		Application of funds	
Revenues		Expenses	
Sales	10,000	Materials & overheads	8,000
		Retained earnings	2,000
	10,000		10,000

The example shows revenue from sales of £10,000. Raw materials and overheads require expenditure of £8,000 which leaves a net profit of £2,000 which for the moment has been retained in the business. Now look at the example below from Young & Co's Brewery plc. Sales of £72m in 1993/4 produced a gross profit, or a contribution, of nearly £50m.

The *gross profit margin* is simply the gross profit divided by sales and usually expressed as a percentage. The overheads are deducted from the gross profit to give the *net profit*, sometimes referred to as profit before interest and tax (PBIT) and sometimes as trading profit. In turn, the *net profit margin* is the net profit divided by sales and expressed as a percentage. For Young & Co, the gross profit margin is 68% and the net profit margin is 11%.

Note that some businesses show the deduction of interest, particularly for long term loans, after calculating profit. This can be particularly helpful since it makes it easier to calculate return on capital and draw conclusions about the business's performance. If you decide to show interest after the net profit do not forget to include it as an overhead in your costing and pricing calculations.

*Depreciation* is always charged to the profit and loss account to show that the use of fixed assets is one of the costs of generating income. It is an allocation of the cost of the fixed assets over their useful, or income generating, lives. Depreciation does not involve the receipt or payment of cash; it is a book entry. It is important, however, that money is put on one side. Otherwise you may not have the resources available when you do need to replace the equipment.

Capital introduced by the owners, loans and loan repayments are not shown on the profit and loss account since they do not represent income or expenditure.

**Case study**

**Young & Co's Brewery plc**

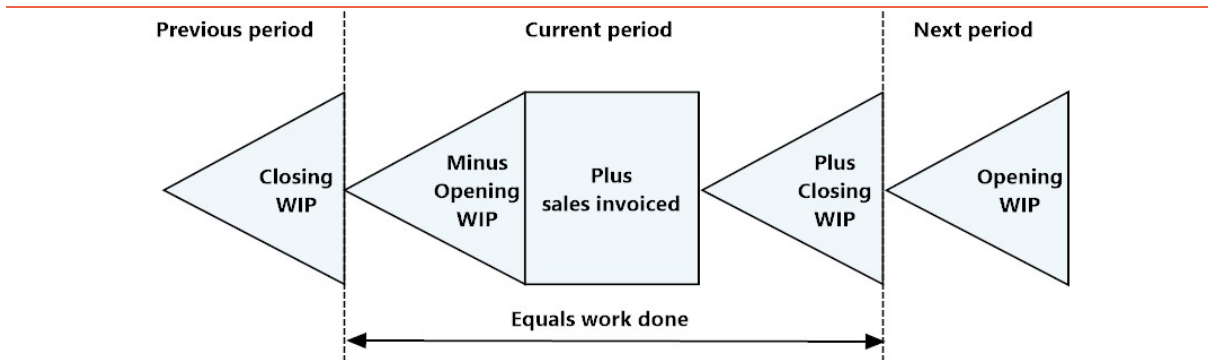
Profit & Loss Account for the year ended 2 April 1994

	£'000	£'000
Sales		72,300
Raw materials	(15,000)	
Excise duty	(7,700)	
		(22,700)
Gross profit		49,600
Employment costs	(21,900)	
Depreciation	(4,000)	
Other operating costs	(15,800)	
		(41,700)
Profit before interest and tax		7,900
Interest payable		(2,700)
Profit before tax		5,200
Tax		(1,700)
Profit after tax		3,500
Dividends		(2,000)
Retained earnings		1,500

**Matching revenues and costs**

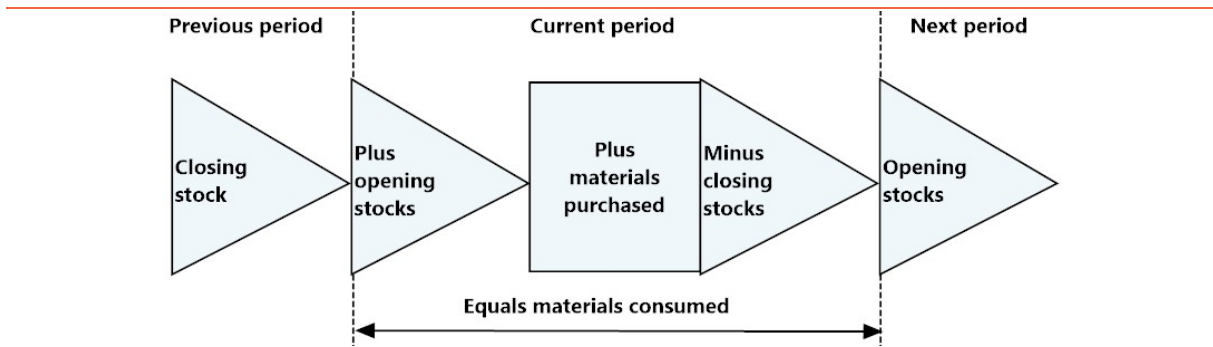
The concept of 'accruals' has been touched on already. It is quite simple. Let us look first at sales. Sales income is not the same as cash received. A sale is normally recorded at the time that the goods are dispatched or a service provided, irrespective of whether the customer has paid. In VAT terms, this is the tax point. The sales made in one period equal the sales invoiced plus the closing WIP less the opening WIP. If a sale has been effected, but no cash has yet been received, the monies owing will be shown on the balance sheet as a debtor. All the sales during the period are summarised as income in the profit and loss account.

**Figure 2: Accruals principle (sales)**



For long term contracts, some businesses treat work in progress as work done and show it as income on their P&L. In this case, care needs to be taken only to count the income once.

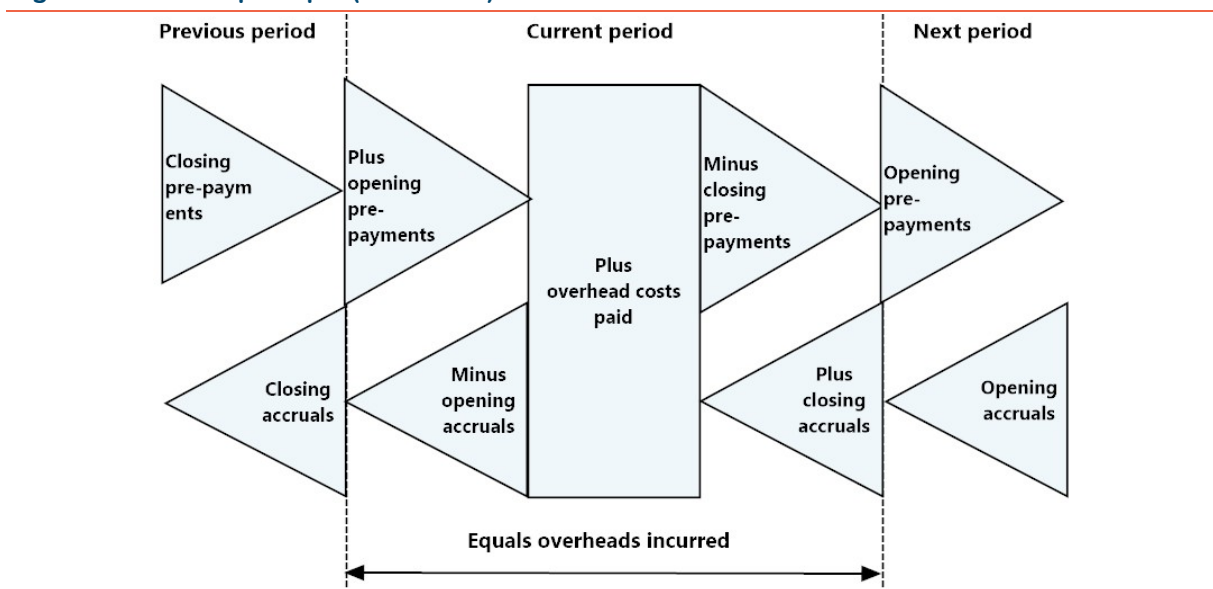
**Figure 3: Accruals principle (stock)**



It is only the raw materials that goes into the 'work done' that are recorded as materials consumed, that is, cost of sales. The closing stock from one period will be the opening stocks for the next period. The materials consumed equals the materials purchased plus the opening stocks brought down from the previous period less the closing stocks carried forward to the next period. The cost of sales is shown on the profit and loss account but the stock is shown on the balance sheet until it is consumed.

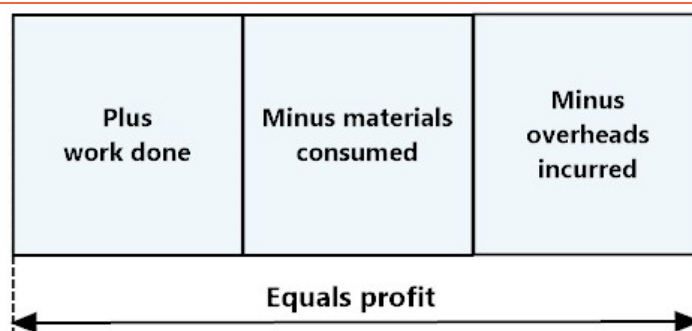
Overheads are charged to the P&L when the resources are used, not when cash is paid. For example, rent of \$12,000 for a two-year period could be paid in advance; the P&L for the first year will include rent of \$6,000 as only that amount is attributable. The balance will be a prepayment. There may also be some accrued expenses, which works in a similar way. The balance sheet shows prepayments and accruals as current assets and current liabilities respectively.

**Figure 4: Accruals principle (overheads)**



These three elements can be summarised as shown in figure 5. The work done less the materials consumed less the overheads incurred equals profit.

Figure 5: Accruals principle (summary)



### Appropriation account

It is normal at the bottom of a P&L account to show an *appropriation account*, that is, an explanation of how the profit is divided. Profit can be divided in just three ways: to the owners (as dividends); to the government as tax; or, it is retained in the business. Interest is usually deducted from profit, so we can summarise as follows:

- Profit before interest and tax (PBIT) (or, if you prefer US jargon, profit is earnings before interest and tax (EBIT); and sometimes they omit depreciation and amortisation as well to give EBITDA)
- Deduct interest to give: Profit before tax (PBT)
- Deduct tax to give: Profit after tax (PAT)
- Deduct dividend to give: Retained earnings (RE) which are transferred to reserves on the balance sheet.

## 3. Balance sheet

What a business owns (its assets) is always equal to what it owes (its liabilities). It is the liabilities that are used to finance the business. The starting point for every business is zero.

Source of funds	Application of funds
Liabilities	Assets

Imagine that you put \$10,000 into a business. That \$10,000 is effectively owed to you, but it is also used to finance the assets of the business. Initially it might be held as *cash in bank*, that is an asset. If the business then spends \$7,000 on equipment, it has fixed assets of \$7,000 and cash in bank of \$3,000, still totalling \$10,000.

Source of funds		Application of funds	
Liabilities		Assets	
Owners	10,000	Cash in bank	3,000
		Equipment	7,000
Total finance	10,000	Total assets	10,000





has resulted in the creation of a reserve fund of £87m which represents the difference between acquisition price and the value at the date of the revaluation. Lastly, it has retained earnings of over £20m. There are long term borrowings of £29m (and deferred taxation of £3m which is effectively on loan from the government) and short-term liabilities of nearly £14m. All of this has been used to finance fixed assets with a valuation of £153m and current assets of nearly £10m. Now let us look at each of the terms in turn:

*Fixed assets* are generally assets with a life longer than one year. For most businesses, all the fixed assets will be tangible assets such as equipment and buildings. The cost of tangible fixed assets is depreciated over the expected lives of the assets; it is quite common to see the original cost of tangible assets together with their accumulated depreciation shown on a balance sheet.

Fixed assets may also include intangible assets such *goodwill* or expenditure on research which has been capitalised. It is now regarded as good practice to write these off as quickly as possible; ideally, they should be written off as expenditure immediately. It is, however, not always possible to write off goodwill in one go without making the balance sheet look sick, although lenders will always ignore goodwill. Research and development costs for contracts which are known and which will last more than one year may be capitalised and depreciated over the term of the contract.

*Current assets* and *current liabilities* usually have a life of less than one year. Current assets include stock, work in progress, debtors, cash at bank, etc. *Debtors* (known in the US as receivables) represent the amount of money owed to the business by its customers. Current liabilities include creditors, overdrafts, loans due within one year, money owed under hire purchase agreements, any amounts owed in VAT or tax, etc. Creditors, sometimes called trade creditors (and payables in the US) represent the amount of money owed by the business to suppliers. The creditors' figure is largely, usually, the money specifically owing for raw materials and sub-contract costs. Loans falling due in more than one year are usually shown separately. You may prefer, however, to show all loans as current liabilities. For small businesses this will generally give a better idea of the business's performance.

Accountants used to prepare balance sheets in the two-column style shown above, and in some countries, still do. Many businesses, however, now show the balance sheet as a single column. There are advantages with both.

Look again at the example above. Move current liabilities to the right and subtract it from current assets to give net current assets. Add the fixed assets. Then move long term loans to the right and subtract it from the previous figure. This gives net assets. Net assets is equal to the owners' finance which is also moved to the right but shown at the bottom. Now look at the revised layout below.

The *total assets* of the business are the fixed assets plus the current assets. In the first illustration, note that is the total of the right hand side of the figure. (Note that total assets

also equals the left hand side, that is owners' funds plus long term loans plus current liabilities).

<b>Young &amp; Co's Brewery plc</b>		
Balance Sheet as at 2 April 1994		
	£'000	£'000
Fixed assets		153,100
Current assets		
Stock	4,000	
Debtors	5,500	
Cash	200	
	9,700	
Current liabilities		
Short term loans	3,400	
Trade creditors	2,800	
Other creditors	7,500	
	13,700	
Net current assets (liabilities)		(4,000)
Total assets less current liabilities		149,100
less: long term loans		32,300
<b>Net assets</b>		<b>116,800</b>
Capital & reserves	7,800	
Share premium account	1,500	
Revaluation reserve	87,100	
Retained earnings	20,400	
<b>Net finance</b>		<b>116,800</b>

*Net current assets*, also known by accountants as *working capital*, is simply the difference between current assets and current liabilities. This should be positive, otherwise the business may not be able to meet debts as they fall due. In the example, it is negative and is known as net current liabilities. The term, working capital, can be slightly confusing since the amount of working capital needed by the business will vary. Remember that the balance sheet is only a snapshot - and the business needs access to the maximum likely difference.

The example shows the creditors falling due after more than one year deducted to show the net assets of the business. This will probably only include bank loans and HP payments due in more than 12 months. Deducting this figure from the net current liabilities gives the *net assets* of the business.

The net assets should be equal to the total capital and reserves, that is, the *net worth*, sometimes known as *net finance* or the *equity* of the business. This comprises the money introduced by the shareholders or owners and the retained earnings. Normally, for a small business, the reserves are simply the retained profits. The term is often misunderstood:

reserves show where the money came from, not how it has been used. It may exist as cash in the bank, but more likely it will have been used to buy more equipment or to add to working capital, that is, to finance stock and work in progress. On balance sheets in this book, I will use the term retained earnings in an effort to avoid any misunderstanding.

The net worth, together with long-term loans, is called the *capital employed*. The distinction between total finance (which equals total assets) and capital employed is that the capital employed excludes short term liabilities. Look again at the two column balance sheet on page 8. Moving current liabilities to the right hand side leaves capital employed on the left equal to net assets on the right. Current liabilities include short term loans and overdrafts. For smaller businesses, short term borrowing tends to be a large proportion of total borrowing, so I suggest that all borrowing is included when calculating capital employed.

Sources of funds				Application of funds	
Total liabilities	Capital employed	Net worth	Retained earnings	Total assets	Fixed assets
			Owners' finance		
	Current liabilities	(Long term) loans	Current assets		

The figure summarises from where the money comes, which can only be:

- retained earnings, that is, profit which has been retained within the business
- equity introduced by the owner(s)
- loans (whether from the bank or effectively, from creditors)

## 4. Cash flow statements

A cash flow statement shows all the receipts to and payments by the business. Cash flow statements for historical periods usually show what happened for a year though they can be prepared for any period. The statement shows how money flowed into and out of the business and relates the P&L to the balance sheet. In particular, it shows by how much the working capital in the business increased or decreased. A cash flow statement only shows cash in and cash out, so non-cash items such as depreciation are ignored.

Source of funds	Application of funds
Receipts	Payments

It sometimes seems strange to people who are not accountants that a business can be profitable and yet be short of money. Remember that profit and cash are not the same.

You will recall that the profit and loss account matches revenues and expenses for a specific period though the revenues accrued for that period may not all have been received nor the

expenses all paid. If, for example a business receives cash of \$5000 in respect of sales and has to pay out \$6,000 in expenses, then it will have to borrow \$1,000 from the bank (or from the owners), even though the level of sales may, in reality, be far higher.

Source of funds		Application of funds	
Receipts		Payments	
Debtors	5,000	Wages	3,000
Bank loan	1,000	Cash purchases	3,000
	6,000		6,000

A typical example taken from Young & Co's Brewery is shown below. Before looking at the example, return to the profit and loss account and the balance sheets for Young & Co and see if you can make a stab at producing the cash flow statement.

Young & Co's Brewery plc			
Statement of cash flow			
	Notes	£'000	£,000
Net cash inflow from operating activities	a		12,300
Returns on investments and servicing of finance			
Interest received		0	
Interest paid		(3,000)	
Dividends paid		(2,000)	
			(5,000)
Taxation			
Corporation tax paid		(1,400)	
Tax paid			(1,400)
Investing activities			
Payments to acquire intangible fixed assets			
Payments to acquire tangible fixed assets		(4,800)	
Receipts from sales of tangible fixed assets		300	
Other		(100)	
			(4,600)
Net cash inflow before financing			1,300
Financing			
Issue of ordinary share capital			
Receipts from new borrowings	b	(15,000)	
Debenture issue costs	b	300	
Repayments of borrowings	b	14,600	
Net cash inflow from financing			(100)
Increase in cash and cash equivalents	c		1,400
			1,300

It may not be immediately obvious how some of the figures in the cash flow statement have been derived, so the annual accounts will usually have notes to explain the figures. As can be seen, Young & Co's working capital has increased by £1.3m. Cash has improved by £1.4m and the stock position by £1m, but the debtors' position has deteriorated by £0.5m.

---

Notes to the cash flow statement

**a. Reconciliation of operating profit to net cash inflow from operating activities**

	£'000
Operating profit	7,900
Depreciation	4,000
Profit on disposal of fixed assets	
(Increase)/decrease in stocks	1,000
(Increase)/decrease in debtors	(500)
Increase/(decrease) in creditors	
Net cash inflow from operating activities	12,300

**b. Analysis of changes in financing during the period**

	Short term	Over 1 year	Total
	£'000	£'000	£'000
At beginning of period	7,700	26,300	34,000
Repayments of borrowing	(2,600)	(12,000)	(14,600)
Net proceeds from new borrowings		14,700	14,700
Movement in bank overdraft (see note c)	(1,800)		(1,800)
At the end of the period	3,400	29,000	32,400

**c. Analysis of the balances of cash and cash equivalents on the balance sheet**

	1994	Change	1993
	£'000		£'000
Cash at bank and in hand	100	(400)	500
Bank overdrafts	(2,300)	1,800	(4,100)
	(2,200)	1,400	(3,600)

Cash flow statements can be used to keep an eye on competitors. For example, if firms are spending more on capital equipment than their depreciation charge suggests, they may be expanding. If their working capital has increased it may simply be because of inflation, or poor control of stocks or debtors, or might point to expansion. If working capital decreases, it might be because of a contraction in business, or a trading loss, or it might be because control of stock and debtors has improved. If working capital has decreased, it may lead to problems of liquidity. Cash flows are particularly helpful to businesses, particularly when they are used as forecasts. They can then be used to summarise targets and to monitor performance.

## 5. Ratio analysis

Many people find it difficult to look at a profit and loss account or a balance sheet and derive a full picture. As a result, ratios – a ratio is the relationship between two numbers – are often used to interpret accounts. They indicate how a business is performing and also suggest trends and patterns.

They can be compared to the same ratios in previous years' accounts and the accounts of other businesses operating in a similar environment.

### 5.1 Profitability

The most important objectives for the business and, arguably therefore, the most important ratios, are those concerned with profitability. You will want to ensure that your gross profit is sufficient to cover all your overhead costs and to generate an additional profit to retain within the business to reinvest and to provide additional working capital. You will also need to generate sufficient cash to repay any loans that might be outstanding. As well as defining levels of profit in absolute terms it is usual to look at profitability as a ratio of profit to sales.

*Gross profit margin* is one objective that should be set at the outset of the business and then closely monitored.

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

If your gross profit margin starts to drop you might be paying too much for raw materials or you may be discounting your sales price too much to achieve sales. Many businesses also set a target for net profit margin. This ratio uses profit before interest and tax (PBIT).

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

Obtaining published accounts for your competitors, if you are able, can reveal a great deal about their performance. Whilst 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.

If you save money at the bank or have investments in quoted companies, you will be interested in the return that you make on your money. This is usually expressed as a percentage of the amount invested, say, 10%. In the same way, profitability ratios show how good your business is as an investment. Furthermore, both lenders and third-party investors will want to know the overall return on capital, as an indication of the security of the investment and how well the business is performing, by giving a comparison with what could have been achieved had the same sum of money been saved or invested on the stock market. Accountants and banks, depending on their preferences, may look at:

- Return on equity (RoE)
- Return on capital employed (RoCE)
- Return on invested capital (RoIC)
- Return on total assets (RoTA)

Whilst these are different they all, in some way, look at the return on assets. It is important, however, to be clear which figures are being used and to be consistent, otherwise comparisons will be meaningless. It is preferred by PROFIT to use RoCE and RoE. In calculating ratios where one of the figures is a balance sheet item, you should use the average for the period covered by the profit and loss account. Published accounts always show the previous period's figures for comparisons. If for any reason, this is not possible, using the figure on the available balance sheet will give an approximation.

Capital employed (CE) was defined earlier. Remember that it was suggested that capital employed is defined to cover all loan finance. The return to the owners can be determined by looking at the return on equity (RoE). 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). Equations for RoCE and RoE are shown below the box:

### Box 1

Young & Co's Brewery plc		Balance sheet			
P & L account					
	£'000		£'000		£'000
<b>Sales</b>	<b>72,300</b>	Capital		Fixed assets	153,100
Raw materials	15,000	Share capital	7,800		
Excise duty	7,700	Share premium	1,500		
	22,700	Revaluation reserve	87,100		
<b>Gross profit</b>	<b>49,600</b>	Retained earnings	20,400		
		<b>Equity</b>	<b>116,800</b>		
Employment costs	21,900	Loans			
Depreciation	4,000	Long term loans	29,000		
Other op. costs	15,800	Deferred taxation	3,300		
	41,700		32,300		
<b>Trading profit</b>	<b>7,900</b>	Current liabilities		Current assets	
Interest payable	2,700	Short term loans	3,400	Stock	4,000
Profit before tax	5,200	Trade creditors	2,800	Debtors	5,500
Tax	1,700	Other creditors	7,500	Cash	200
<b>Profit after tax</b>	<b>3,500</b>		13,700		9,700
Dividends	2,000				
Retained earnings	1,500	Total finance	162,800	Total assets	162,800

We can apply the alternative methods suggested above to Young & Co's profit and loss account illustrated in box 1.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Sales}} \times 100\% = \frac{49,600}{72,300} \times 100\% = 69\%$$

$$\text{Net profit margin} = \frac{\text{PBIT}}{\text{Sales}} \times 100\% = \frac{7,900}{72,300} \times 100\% = 11\%$$

Note that capital employed is equal to equity (116,800) plus long term liabilities (32,300) plus (as suggested above) short term loans (3,400), which gives 152,500, so

$$\text{RoCE} = \frac{\text{PBIT}}{\text{CE}} \times 100\% = \frac{7,900}{152,500} \times 100\% = 5\%$$

$$\text{RoE} = \frac{\text{PAT}}{\text{NW}} \times 100\% = \frac{3,500}{116,800} \times 100\% = 3\%$$

If you do not know the tax position, or if you want to relate RoE to other ratios of return on capital, you could use PBIT instead of PAT.

## 5.2 Solvency

If the net worth of the business becomes negative, that is the total liabilities exceed total assets, then the business has become insolvent. In other words, if the business closed it would not be possible to repay all the people who are owed money. Allowing a company to become insolvent is an offence, so you should take care to watch the figures closely. One ratio which gives an indication of solvency is the *gearing*. Many businesses, as they grow larger, do choose to set a gearing objective.

Gearing is normally defined as the ratio of debt (that is, 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.

$$\text{Gearing} = \frac{\text{total borrowing}}{\text{equity} + \text{total borrowing}}$$

Ideally, the gearing should not be greater than 50% although it often is, particularly for new, small businesses. If cash flow is stable and profit is fairly stable, then you can afford a higher gearing. It may be worth noting that banks frequently include the total overdraft facility rather than the actual level of overdraft being used when they calculate gearing.

You may also come across the term *leverage* which is just a different way of defining the gearing of the business. Leverage is defined as the capital employed divided by the equity.

### Effect of gearing

The gearing of a business has an important effect on the return achieved on capital. The only way to improve the efficiency with which you use your capital is to make it work harder for you.

This is more difficult than it sounds. One way is to employ less equity in the business and to use more loan finance. Let us look at a simple example.

Ignoring the effect of taxation, Company A has \$20,000 capital employed, all of which is equity and makes a profit of \$5,000. RoCE is, therefore, 25%. RoE is also 25%. Company B has \$20,000 capital employed; half is equity and half is borrowed from the bank at 12½%.



It, too, makes a profit of \$5,000 so RoCE is still 25%. Interest reduces the profit to \$3,750 giving an RoE of 38%, dramatically higher than company A.

Company C also has \$20,000 capital employed, but in this case just \$2,000 is equity and \$18,000 is borrowed, again at 12½%. Its profit of \$5,000 still gives an RoCE of 25%. Interest reduces the profit to \$2,750 but this is now a substantial 138% RoE.

If the RoCE falls below the cost of borrowing money then the leverage works in the other direction.

Company D has \$20,000 capital employed all of which is equity. It makes a profit of \$2,000 and, therefore, an RoCE of 10%.

Company E has \$20,000 capital employed of which half is a loan at 12½%. Profit before interest of \$2,000 is reduced to \$750 after interest of \$1,250 is deducted to give an RoE of 8%.

Company F has \$20,000 capital employed of which \$18,000 is a loan at 12½%. It makes a profit of \$2,000 also giving an RoCE of 10%, but it is in real trouble. Its interest amounts to \$2,250 giving an overall loss of \$250. As a result equity investors, who will not have to contribute to losses, will want gearing as high as possible to benefit from the leverage effect of a RoCE 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.

Look at the example in box 2:

$$\text{Gearing} = \frac{\text{Loans}}{\text{CE}} \times 100\% = \frac{35,700}{152,500} \times 100\% = 23\%$$

In addition to watching the gearing, bankers will also want to be satisfied that you will be able to pay the interest on their loans. They particularly look, therefore, at how many times your profit exceeds their interest.

$$\text{Interest cover} = \frac{\text{PBIT}}{\text{Interest}} = \frac{7,900}{2,700} = 2.9 \text{ times}$$

If this is more than 4 it is very good. If it is less than 2 it may indicate potential problems if interest rates rise.

## Box 2

Case study	Young & Co's Brewery plc		Balance sheet		
	P & L account				
	£'000		£'000		£'000
Sales	72,300	Capital		Fixed assets	153,100
Raw materials	15,000	Share capital	7,800		
Excise duty	<u>7,700</u>	Share premium	1,500		
	22,700	Revaluation reserve	87,100		
Gross profit	49,600	Retained earnings	<u>20,400</u>		
		<b>Equity</b>	<b>116,800</b>		
Employment costs	21,900	Loans			
Depreciation	4,000	Long term loans	29,000		
Other op. costs	<u>15,800</u>	Deferred taxation	<u>3,300</u>		
	41,700		<b>32,300</b>		
<b>Trading profit</b>	<b>7,900</b>	Current liabilities		Current assets	
Interest payable	<u>2,700</u>	Short term loans	<b>3,400</b>	Stock	4,000
Profit before tax	5,200	Trade creditors	2,800	Debtors	5,500
Tax	1,700	Other creditors	<u>7,500</u>	Cash	<u>200</u>
Profit after tax	3,500		13,700		9,700
Dividends	2,000				
Retained earnings	1,500	Total finance	162,800	Total assets	162,800

## 5.3 Liquidity ratios

A business should always have enough current assets (eg stock, work in progress, debtors, cash in the bank and so on) to cover current liabilities (eg bank overdraft, creditors and so on). Liquidity ratios indicate the ability of the business to meet liabilities with the assets available. 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. If it is less than 1 (ie current liabilities exceed current assets) you could be insolvent. A stricter test of liquidity is the quick ratio or acid test. Some current assets, such as work in progress and stock, can be difficult to turn quickly into cash. Deducting these from the current assets gives the quick assets.

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

The quick ratio should normally be around 0.7-1. To be absolutely safe, the quick ratio should be at least 1, which indicates that quick assets exceed current liabilities. If the current ratio is rising and the quick ratio is static, there is almost certainly a stockholding problem. You need to counteract this by selling off your excess stock. If you can't, you need to review whether customers want to buy your product at the price at which you are trying to sell.

### Box 3

Young & Co's Brewery plc					
P & L account		Balance sheet			
	£'000		£'000		£'000
Sales	72,300	Capital		Fixed assets	153,100
Raw materials	15,000	Share capital	7,800		
Excise duty	<u>7,700</u>	Share premium	1,500		
	22,700	Revaluation reserve	87,100		
Gross profit	49,600	Retained earnings	<u>20,400</u>		
		<b>Equity</b>	116,800		
Employment costs	21,900	Loans		Current assets	
Depreciation	4,000	Long term loans	29,000	Stock	4,000
Other op. costs	<u>15,800</u>	Deferred taxation	<u>3,300</u>	Debtors	5,500
	41,700		32,300	Cash	<u>200</u>
		Current liabilities			9,700
<b>Trading profit</b>	7,900	Short term loans	3,400		
Interest payable	<u>2,700</u>	Trade creditors	2,800		
Profit before tax	5,200	Other creditors	<u>7,500</u>		
Tax	1,700		<b>13,700</b>		
Profit after tax	3,500				
Dividends	2,000				
Retained earnings	1,500	Total finance	162,800	Total assets	162,800

Banks and other lenders find it helpful to calculate the 'defensive interval'. This is the best measure of impending insolvency and shows the number of days the business can exist if no more cash flows into the business. As a guide, it should be 30-90 days.

The daily operating expenses are best determined from the cash flow statement – take the total payments for the year and divide by 365. If a cash flow figure is not easily available, you can make an approximation by taking figures from the profit & loss account – take total payments, add interest and deduct depreciation – and make a stab at adding net loan repayments estimated from the balance sheet.

$$\text{Defensive interval (days)} = \frac{\text{Quick assets}}{\text{daily operating expenses}}$$

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}} = \frac{9,700}{13,700} = 0.7$$

$$\text{Quick ratio} = \frac{\text{quick assets}}{\text{current liabilities}} = \frac{5,700}{13,700} = 0.4$$

$$\text{Defensive interval} = \frac{\text{quick assets}}{\text{daily operating expenses}} = \frac{5,700}{63,100 / 365} = 33 \text{ days}$$

(Note that daily operating expenses has been estimated here as cost of sales (£22,700) plus overheads (£41,700) less depreciation (£4000) plus interest (£2,700) then divided by 365 to find the daily amount.)

## 5.4 Efficiency ratios

Efficiency ratios provide a measure of how much working capital is tied up, indicate how quickly you collect outstanding debts and pay your creditors and show how effective you are in making your money work for you. They show how good is the management of the business. You will be particularly keen to monitor how quickly your debtors pay you.

$$\text{Debtors' turnover ratio} = \frac{\text{sales}}{\text{average debtors(ex VAT)}}$$

Ideally use the average debtors for the period. An approximation is given by dividing the sales by the debtors at the end of the period. Dividing this ratio into the days of the year gives the average collection period in days.

$$\text{Average collection period} = \frac{365 \times \text{debtors (ex VAT)}}{\text{sales}}$$

Tight credit control is essential. Keep the collection period as short as possible. Many businesses aim to operate on 30 days, but often find it is worse than that.

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

$$\text{Creditors' turnover ratio} = \frac{\text{cost of sales}}{\text{average creditors (ex VAT)}}$$

$$\text{Average payment period} = \frac{365 \times \text{creditors (ex VAT)}}{\text{cost of sales}}$$

It is normal to use cost of sales in calculating the average payment period when comparing your business with others. However, you may need to approximate by using the sales figures unless you can determine the cost of sales of your competitors.

Stock will increase in time of expansion and decrease in times of contraction. For some businesses, such as wholesalers and some 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 you will need to address.

$$\text{Stock turnover ratio} = \frac{\text{cost of sales}}{\text{average stock}}$$

It is often helpful to know the stock holding period.

$$\text{Average stock holding period} = \frac{365 \times \text{stock}}{\text{cost of sales}}$$

A fruit shop, for example, would expect an average holding 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 turn of just 3-4 and a holding period of around 90-120 days. This is because it needs to carry a very high level of stock in order to give sufficient choice to its

customers. Holding stock for too long has serious implications for the amount of money that the business has tied up in stock.

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.

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

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. For a large British company the asset turn is typically 1.1.<sup>2</sup> A profitable company would typically have an asset turn of 1.3-1.5. Note that

$$\text{Net profit margin} \times \text{asset turn} = \text{ROTA}$$

A net profit margin of around 10%, combined with an asset turn of 1.4, would give a return on total assets of 14%.

#### Box 4

Young & Co's Brewery plc		Balance sheet			
P & L account					
	£'000	£'000		£'000	
Sales	72,300	Capital		Fixed assets	153,100
Raw materials	15,000	Share capital	7,800		
Excise duty	7,700	Share premium	1,500		
	22,700	Revaluation reserve	87,100		
Gross profit	49,600	Retained earnings	20,400		
		<b>Equity</b>	<b>116,800</b>		
Employment costs	21,900	Loans		Current assets	
Depreciation	4,000	Long term loans	29,000	Stock	4,000
Other op. costs	15,800	Deferred taxation	3,300	Debtors	5,500
	41,700		32,300	Cash	200
<b>Trading profit</b>	7,900	Current liabilities		<b>Total assets</b>	<b>162,800</b>
Interest payable	2,700	Short term loans	3,400		
Profit before tax	5,200	Trade creditors	2,800		
Tax	1,700	Other creditors	7,500		
Profit after tax	3,500		13,700		
Dividends	2,000				
Retained earnings	1,500	Total finance	162,800		

$$\text{Average collection period} = \frac{365 \times \text{debtors}}{\text{Sales}} = \frac{365 \times 5,500}{72,300} = 28 \text{ days}$$

$$\text{Average payment period} = \frac{365 \times \text{creditors}}{\text{Cost of sales}} = \frac{365 \times 2,800}{15,000} = 68 \text{ days}$$

$$\text{Stock holding period} = \frac{365 \times \text{stock}}{\text{Cost of sales}} = \frac{365 \times 4,000}{22,700} = 64 \text{ days}$$

<sup>2</sup> Ciaren Walsh, "Key Management Ratios", FT/Pitman Publishing, 1993.

$$\text{Asset turn} = \frac{\text{Sales}}{\text{Total assets}} = \frac{72,300}{162,800} = 0.44$$

Keeping costs under control is absolutely essential if the net profit margin is to be maintained - or increased. It will help to consider costs both in absolute terms as well as a percentage of sales revenue. The objective should be to restrict them to a maximum percentage once again. These figures can be compared year on year and against competitors if they are turned into ratios. For example:

$$\frac{\text{Selling costs}}{\text{Sales}}$$

Selling costs include all marketing and advertising costs as well as the payroll costs of any sales people that you employ. They might also include distribution costs. Are the selling costs being contained? Is the effort put into selling reflected in the sales? Watching this figure carefully will also provide data to help in the preparation of demand curves.

$$\frac{\text{Administration costs}}{\text{Sales}}$$

Are the administration costs being maintained? If they are very low, is customer service suffering?

$$\frac{\text{Production costs}}{\text{Sales}}$$

Production costs include raw material costs, costs of any sub-contract work, labour costs involved in the production process and any overheads directly associated with the production process. For most small businesses, production costs will simply be raw materials and sub-contract work, that is, direct costs. It is very difficult to control overheads. Left unchallenged, they will grow and eat into profits. Use ratios such as these to watch for sudden increases or variances. But also continually look to see if there are ways to reduce the total overhead burden.

## 5.5 Staff performance

Many businesses use ratios which show the overall performance of the business using the number of staff as the denominator rather than a monetary figure. Some common performance indicators are:

$$\text{Profit per employee} = \frac{\text{PBIT}}{\text{Number of employees}}$$

$$\text{Output per employee} = \frac{\text{Sales}}{\text{Number of employees}}$$

$$\text{Productivity} = \frac{\text{Employment costs}}{\text{Sales}}$$

## 5.6 Conclusion

An integral part of planning and making decisions is a comprehensive understanding of the current position of your business – financial statements are the most effective tools for monitoring your current position.

The three types of financial statements – profit and loss account, balance sheet and cash flow statement – enable you to monitor your finances; they also provide information which you can use as the basis of calculating performance indicators such as ratios.

The profit and loss account records the total revenue and total expenditure related to a specific period. It is this statement that monitors the profitability of the business – whether the level of sales are sufficiently high and the level of expenditure is sufficiently low. The balance sheet, by summarising the different types of assets and liabilities of a business, indicates how much finance is tied up and what level of working capital there is. From this, it is possible to monitor liquidity and solvency. The cash flow statement is most useful when written as a forecast. By calculating budgets for prospective sales, costs and schedules, it is possible to establish when there will be a cash flow deficit. If this is foreseen, then arrangements can be made to borrow money for working capital – arranging an overdraft, for example. Monitoring performance against the cash flow forecast will also help to identify other problems; corrective action can then be taken as required. Using ratios to set targets and then to monitor performance will assist you to know, at all times, the financial position of your business. Ratios can be used to monitor whether you are on target in relation to sales as well as in keeping control of costs.

## 6. Further reading

There are countless books available on finance and financial statements. If you would like to read about this further, we can make available a PDF version of the book from which this factsheet is extracted. Please e-mail us.

**DISCLAIMER** While all reasonable efforts have been made to ensure the accuracy of the information in this factsheet, the publisher makes no warranties that it is accurate or up-to-date and will be neither responsible for any errors or omissions nor any consequences of any errors or omissions. Professional advice should be sought where appropriate.

website

**contact@profit-accelerator.com**

email

PROFIT is an initiative of the Asian Development Bank, managed by a partnership of IMC Worldwide, ASSIST Asia & Bombay Chamber of Commerce & Industry.

