

David Alexander & Christopher Nobes

FINANCIAL ACCOUNTING

AN INTERNATIONAL INTRODUCTION

Seventh Edition

FINANCIAL ACCOUNTING

An International Introduction

Figure 7.3 Bread Co. balance sheets (€000): horizontal presentation

At 31 December 20X1			
<i>Fixed (non-current) assets</i>	72	Ordinary shares of €1 each	70
		Retained profits	<u>24</u>
<i>Current assets</i>		Shareholders' funds	<u>94</u>
Inventory	12	<i>Payables greater than one year</i>	–
Receivables	18		
Bank	<u>10</u>	<i>Payables less than one year</i>	
	40	Trade payables	10
		Taxation	4
		Other creditors	<u>4</u>
			18
	<u>112</u>		<u>112</u>
At 31 December 20X2			
<i>Fixed (non-current) assets</i>	110	Ordinary shares of €1 each	76
		Retained profits	30
<i>Current assets</i>		<i>Payables greater than one year</i>	
Inventory	16	10 per cent debentures	20
Receivables	40		
Bank	<u>4</u>	<i>Payables less than one year</i>	
	60	Trade payables	28
		Taxation	10
		Other creditors	<u>6</u>
			44
	<u>170</u>		<u>170</u>

Feedback The values (from Figure 7.1) are as follows:

$$\text{Gross profit margin for 20X1} = \frac{50}{150} = 33.3 \text{ per cent}$$

$$\text{Gross profit margin for 20X2} = \frac{74}{250} = 29.6 \text{ per cent}$$

An alternative way to consider this is to relate the gross profit to the cost of goods sold, thus giving the mark-up as a percentage of cost. Using such a mark-up might well be the way in which the business manager decided upon the selling price. The calculation of the mark-up is as follows:

$$\text{Mark-up for 20X1} = \frac{50}{100} = 50 \text{ per cent}$$

$$\text{Mark-up for 20X2} = \frac{74}{176} = 42 \text{ per cent}$$

For Bread Co. the gross profit margin has fallen since the previous year. Some of the possible reasons for this are obvious. For instance, the selling price may have been deliberately lowered or the cost of goods sold may have increased but a decision made not to increase selling prices correspondingly. Alternatively the mix of sales may have altered, with an increase in the proportion of low-margin goods.

There might also be other less visible reasons. For example, note how the cost of goods sold, and therefore gross profit figures, are directly affected by the inventory figures. The fall in gross profit margin, if unexpected, could suggest an error in the calculation of one of the inventory figures or that goods were being stolen from the business in 20X2.

You will remember that Bread Co. is a retail business. The calculations for a manufacturing business would be more complicated because cost of sales means the manufacturing cost in such a business. This will include a variety of separate items, including direct labour and materials, production overheads and possibly some arbitrary proportion of some of the more general overheads as well. Full information enabling a proper split of the results between gross profit and net profit may not be available. If it is available, it is likely to be based on debatable assumptions about cost behaviour and cost allocation.

An additional practical problem is that some companies use a different format for the income statement, illustrated in Table 6.5 (by-nature horizontal format). For a manufacturing company, this does not reveal the cost of goods sold and gross profit, but adds an increase in inventory to sales and then deducts all expenses including raw materials, wages and depreciation. Sometimes reasonable assumptions can be made about which of these are manufacturing expenses, in order to produce a useful approximation to gross profit, but sometimes such assumptions will be based on too much guesswork to be reliable.

7.3.2 Net profit margin

The net profit is the difference between the sales and all the expenses. The net profit margin shows the net benefit to the business per unit of sales. The formula is:

$$\text{Net profit margin} = \frac{\text{Net profit before tax}}{\text{Sales}}$$

Activity 7.C

Calculate the net profit margin for Bread Co. for 20X1 and 20X2 and comment briefly.

Feedback

The figures are calculated thus:

$$\text{Net profit margin for 20X1} = \frac{12}{150} = 8.0 \text{ per cent}$$

$$\text{Net profit margin for 20X2} = \frac{22}{250} = 8.8 \text{ per cent}$$

These values show that the efficiency that Bread Co. demonstrates in turning sales into profit generation has slightly increased in 20X2 compared with 20X1.

The net profit margin will be affected by two major considerations, namely the gross profit margin and the size of the expenses. It may be useful, therefore, to compute an expenses-to-sales ratio as well, as set out below.

7.3.3 Expenses to sales

The expenses-to-sales ratio explains the movement between gross and net profit margins. The formula for this ratio is:

$$\text{Expenses to sales} = \frac{\text{Expenses}}{\text{Sales}}$$

Activity 7.D

Calculate the expenses-to-sales ratio for Bread Co. for 20X1 and 20X2 and comment on the picture revealed so far.

Feedback

The ratios can be calculated thus:

$$\text{Expenses to sales in 20X1} = \frac{38}{150} = 25.3 \text{ per cent}$$

$$\text{Expenses to sales in 20X2} = \frac{52}{250} = 20.8 \text{ per cent}$$

Bread Co. has successfully managed to increase sales quite substantially in 20X2 without a corresponding pro rata increase in the expenses of running the business.

It is interesting to put together the ratios that have been calculated so far. These are shown in Table 7.1.

The fall in gross profit margin has been more than compensated for by the fall in the relative size of the expenses, leading to a slight improvement in the net profit margin.

These figures go part-way towards the preparation of common-size income statements. A common-size income statement is usually prepared by expressing each item as a percentage of total sales. Furthermore, if this technique is applied to the income statements of two different businesses, two benefits emerge. First, any size differences are taken into account, so that the internal relationships can be compared on equal terms. Second, the internal relationships themselves are clarified and highlighted in a manner convenient to the eye and the mind.

The common-size statements for Bread Co. are shown complete in Figure 7.4, and give more detail on the way in which the success in controlling total expenses has been achieved. In effect, Figure 7.4 calculates each expense item separately as a percentage of sales. A similar technique can be used for balance sheets. Each item will be expressed as a percentage either of total assets or of total non-current (fixed) assets plus net current assets, depending on the balance sheet structure preferred.

Table 7.1 Bread Co. profit ratios

	20X1	20X2
Gross profit margin (%)	33.3	29.6
Expenses to sales (%)	25.3	20.8
Net profit margin (%)	8.0	8.8

Figure 7.4 Bread Co. common-size income statements (all figures are percentages of sales)

	Year ended 31 Dec 20X1	Year ended 31 Dec 20X2
Sales	100	100
Cost of sales	<u>66.7</u>	<u>70.4</u>
Gross profit	33.3	29.6
Wages and salaries	13.3	10.4
Depreciation	2.7	3.2
Debenture interest	–	0.8
Other expenses	<u>9.3</u>	<u>6.4</u>
	<u>25.3</u>	<u>20.8</u>
Net profit before tax	<u>8.0</u>	<u>8.8</u>

7.3.4 Net operating profit

Ratio preparation is a pragmatic business. It is, of course, possible to calculate a ratio that is ‘wrong’ in the sense of being defined or calculated in an illogical manner. Even so, once that hurdle has been overcome, there is still no list of ‘right’ ratios. For example, in the above discussion, the debenture interest was treated as just another expense. However, depending on the purpose of the analysis, it may be more helpful to view the debenture interest as different and separate from the other expenses, on the grounds that it is concerned with the financing structure rather than with the operation of the business. This leads to the idea of calculating the percentage of net operating profit to sales, i.e. taking the profit before deduction of the debenture interest. Then we would have:

$$\text{Net operating profit margin} = \frac{\text{Net operating profit}}{\text{Sales}} \times 100 \text{ per cent}$$

Activity 7.E

Calculate the net operating profit margin for Bread Co. for 20X1 and 20X2 and comment briefly.

Feedback

There was no interest expense in 20X1, but there was an expense of 2 in 20X2 (see Figure 7.1). The ratios can be calculated thus:

$$\text{Net operating profit margin for 20X1} = \frac{12}{150} = 8.0 \text{ per cent}$$

$$\text{Net operating profit margin for 20X2} = \frac{(22 + 2)}{250} = 9.6 \text{ per cent}$$

This shows that, in terms of the costs of operating, ignoring any costs of financing, the efficiency of Bread Co. increased even more in 20X2.

Why it matters

From a management perspective, the efficiency of operating (i.e. production and selling) activities is quite distinct from the question of the efficacy of the financing structure. The improvement of each of these two functions is independent of the other.

It is likely to be helpful, therefore, to separate the two types of results for analysis purposes. Note, however, that net profit ratios and net operating profit ratios are not mutually exclusive alternatives. They both provide useful insights into the situation and progress of the business.

7.4 Profitability ratios

It is not sufficient to analyse the income statement and the profit position in isolation. Business operation requires the use of scarce resources that are not cost-free and need to be used as efficiently as possible. It is essential to analyse the results of the operations in relation to the resources being used by the business and controlled by the management of the business. This leads to a variety of relationships and ratios that need to be explored. Strictly speaking, when comparing an item from an income statement (which is the total of a year's activity) with an item from a balance sheet (which is at a point in time), the *average* balance sheet figure for the year should be used. In practice, closing balance sheet figures are often taken as a reasonable approximation.

7.4.1 Asset turnover ratios

One approach to exploring the relationship between returns and resources is to consider some or all of the assets as recorded in the balance sheet. Possibilities include considering total assets, net assets (i.e. assets minus liabilities) or non-current assets alone. These could be related to, for example, sales, gross profit, net profit or net operating profit. Using net profit or net operating profit gives an indication of the rate of return being generated through the use of the assets.

Table 7.2 shows six such ratios calculated for Bread Co. for 20X1 and 20X2. Care has to be taken in applying ratios like these, for there are many influences on the asset figures used that are not related to business efficiency. For example, a business that buys additional inventory without paying for it, just before the balance sheet date, will show an increase in total assets but not an increase in net assets. Therefore, the net asset picture better reflects the economic reality. The figures used for non-current assets (which are also incorporated into the net asset and total asset figures) are notoriously susceptible to changes in depreciation, impairment, valuation or asset replacement policies. Nevertheless, useful indications of trend can often be discovered from ratios like these, provided that the weaknesses and peculiarities behind the figures in each particular business are explored and understood.

Activity 7.F

Comment on the implications for the performance of Bread Co. of the information shown in Table 7.2.

Feedback

When looking at Table 7.2, it seems that the efficiency of use of net assets has increased significantly from 20X1 to 20X2, as sales to net assets and net profit to net assets have both risen sharply. The other four ratios presented have increased a little. It should also be noticed that the net assets have not increased much, whereas non-current assets and total assets have both increased very substantially. The net assets, unlike either of the other two asset aggregates, have been held down by a sharp increase in liabilities.

Table 7.2 Bread Co.: some asset turnover ratios

	20X1	20X2
$\frac{\text{Sales}}{\text{Fixed assets}}$	$\frac{150}{72} = 2.1$	$\frac{250}{110} = 2.3$
$\frac{\text{Sales}}{\text{Net assets}}$	$\frac{150}{94} = 1.6$	$\frac{250}{106} = 2.4$
$\frac{\text{Sales}}{\text{Total assets}}$	$\frac{150}{112} = 1.3$	$\frac{250}{170} = 1.5$
$\frac{\text{Net profit}}{\text{Fixed assets}}$	$\frac{12}{72} = 0.17$	$\frac{22}{110} = 0.20$
$\frac{\text{Net profit}}{\text{Net assets}}$	$\frac{12}{94} = 0.13$	$\frac{22}{106} = 0.21$
$\frac{\text{Net profit}}{\text{Total assets}}$	$\frac{12}{112} = 0.11$	$\frac{22}{170} = 0.13$

7.4.2 Non-financial resource ratios

Much useful information about business activities is non-financial. This not only applies to information about some of the important outputs, such as chemical or noise pollution, but also to information about some of the inputs. Concentration on non-financial data may be especially useful in relation to a resource input that is particularly scarce or expensive. Sales per employee is a good example of this type of ratio, where sales could be expressed in money terms or in non-financial terms such as the number of units produced each year per employee. Another example is output or sales per square metre of retail space.

Whether or not non-financial ratios like these are useful will depend on the particular situation and available information. However, they may permit useful comparisons of different organisational structures and different trends of development.

7.4.3 Return on equity (ROE)

A further approach to investigating the relationship between returns and the resources employed to create them is to consider the sources of finance on the other side of the balance sheet. This is probably the most interesting approach, because it enables analysts to focus on various subsets of the total finance being provided and to consider the return generated *for* that particular subset and its providers. Several different ratios are now considered.

Return on equity relates the return made *for* the shareholders with the finance made available *by* the shareholders. It can be calculated either before tax deductions or after them and it may well be useful to do both. If the issue to be explored is the return potentially available for distribution to shareholders, then clearly the after-tax position has to be taken. However, the deduction of tax is a distortion when investigating the efficiency of management in organising the operations of the business is required or when comparing ROE with rates of return on other sources