

# Unit 1

## Ratios and interpretation

As we learnt in our earlier studies, accounting information is used to answer two key questions about a business:

- Is it making a profit?
- Are its assets sufficient to meet its liabilities?

We have also considered the form in which different types of businesses prepare their final accounts. Now we need to examine in more detail how these accounting statements can be used to assess a business' performance and progress. There are two stages in this process:

- 1 Analysis** This is the detailed examination of various aspects of a business' performance. To make comparisons (with other businesses or for the same business over a period of time) easier and more meaningful, the results are expressed as percentages or ratios, e.g. the percentage of gross profit to sales, or the working capital ratio.
- 2 Interpretation** Here the results of analysis are used to judge a business' performance. This is done by making comparisons
  - a** with other similar businesses, usually within the same year, e.g. was the gross profit to sales percentage last year better or worse than the average for the trade or industry?
  - b** for the same business over a number of years, e.g. has the trend of the gross profit percentage to sales over the last five years been up or down?

We will also examine the extent to which analysis and interpretation are useful tools for owners and others in making and assessing business decisions.

This unit is divided into three sections:

Section 1: Ratios
Section 2: The uses of accounting statements
Section 3: Cash flow statements (NSSCH)

### Section 1 Ratios

By the end of this section you should be able to:

- explain the meaning of the term accounting ratios
- classify accounting ratios into profitability, liquidity, efficiency and investment ratios
- define liquidity ratios
- calculate liquidity ratios (current, quick)
- explain the uses of liquidity ratios

- define efficiency ratios
- calculate efficiency ratios (rate of stock turn, collection period for debtors, payment period for creditors)
- explain the uses of efficiency ratios
- define profitability ratios
- calculate profitability ratios (percentage of gross profit and net profit to sales, net profit as a percentage of capital employed)
- explain the uses of profitability ratios
- calculate the working capital and the effects of transactions on it
- make suggestions and recommendations for improving profitability and working capital
- define investment ratios (NSSCH)
- calculate investment ratios (earnings per share, price/earnings) (NSSCH)
- explain the uses of the investment ratios (NSSCH)

We will now revise our understanding of some key terms that relate to and would be used in a Balance Sheet. If you feel you need help, refer to Module 1, where we looked at the information contained in a Balance Sheet. We learnt about the differences between assets and liabilities and how they are shown in appropriate groupings which help us to recognise the different definitions of business capital.

## Assets and liabilities

**1 Assets** are what the business owns and show how resources are used.

	Main characteristics	Example(s)
<b>Fixed</b>	For long-term use in the business Enable revenue to be earned Not held for re-sale	
• intangible –	have a monetary value but no separate physical existence	Goodwill
• tangible –	do have physical existence; shown at cost less depreciation to date	Land and buildings (*see Note), equipment, fittings, machinery, vehicles
<b>Investments</b>	Money invested in an account for a long time period without using it	Fixed deposit
<b>Current</b>	Constantly changing Easily turned into cash	Stock, debtors, cash and bank
	Income amount not yet received for the current financial period	Accrued Income
	Expense amount already paid for the next financial period	Prepaid Expenses

### Note

Land will not normally be depreciated unless its value is likely to fall due to some special circumstance. However, any buildings or property on the land will depreciate and should therefore be written off over their expected useful life.

**2 Liabilities** are what the business owes and show where resources come from.

	Main characteristics	Example(s)
<b>Owner's equity</b>	Amount of owner's investment in the business; owed by the business to owner – sole trader, partner, shareholder	Capital and drawings
<b>Long-term</b>	Not repayable within one year External source of funds	Bank loan, loan on mortgage
<b>Current</b>	Short-term, payable within one year Arise from normal trading activities	Creditors, bank overdraft
	Income amount already received for the next financial period	Income Received in Advance
	Expense amount not yet paid for the current financial period	Accrued Expenses

A business' final accounts – its Trading and Profit and Loss Account, and Balance Sheet – show results and information that are important to the owner(s). But we also need to consider how useful this information is now and how it can be used in making decisions for the future.

### What the Balance Sheet shows

In Module 1 we also considered the Balance Sheet of Joe Kover as at 31 December 20.2. This is now shown in vertical form on the next page.

### Kinds of capital

- 1 Capital owned** by Joe in the business at 31 December 20.2 is N\$122 000 (this is sometimes called **capital invested**).
- 2 Capital employed** is the amount Joe has invested plus any long-term (external) source of funds (in this case, the bank loan). Capital employed is therefore **N\$127 000** (N\$122 000 + N\$5 000).
- 3 Working capital** is very important because it tells Joe whether his business can meet its debts, i.e. whether or not the business is **solvent**.

#### Hint

Another way of calculating capital employed is to subtract the current liabilities from the total of the assets.

**Working capital is found by deducting current liabilities from current assets.**

<b>In Joe's case this is</b>	<b>N\$</b>
Current assets	16 000
<u>Less</u> Current liabilities	<u>13 000</u>
Working capital	<u>3 000</u>

**Joe Kover**  
**Balance Sheet as at 31 December 20.2**

	N\$	N\$	N\$
<b>Capital Employed</b>			
<b>Owner's Equity</b>			122 000
Capital	120 000		
Add net profit for year	12 000	132 000	
Less Drawings		10 000	
			5 000
<b>Long-term liability</b>			
Bank loan		5 000	
			127 000
<b>Employment of Capital</b>			
<b>Fixed assets</b>	<b>Cost Price</b>	<b>Provision for Depreciation</b>	<b>Book Value</b>
Shop premises	90 000		90 000
Furniture and fittings	37 000	3 000	34 000
	127 000	3 000	124 000
Working capital			3 000
<b>Current assets</b>		16 000	
Stock	6 000		
Debtors	8 000		
Bank	1 500		
Cash	500		
<b>Less Current liabilities</b>		13 000	
Creditors	13 000		
			127 000

## ACTIVITY 1

- 1 Explain the difference between tangible fixed assets and intangible fixed assets.
- 2 The following Trial Balance was taken from the books of Sam Smith on 31 December 20.2:

Balance Sheet Account Section	Debit N\$	Credit N\$
Capital 31 December 20.2		80 000
Premises at cost	50 000	
Equipment at cost	20 000	
Provision for depreciation of equipment		7 000
Stock	12 000	
Debtors and Creditors	11 000	8 000
Accrued Expenses (rent)		2 000
Prepaid Expenses (insurance)	1 000	
Bank	3 000	
	97 000	97 000

For the year ended 31 December 20.2, Sam's net profit was N\$8 000 and his drawings were N\$5 000.

- a Calculate Sam's capital at 1 January 20.2.
- b Prepare Sam's Balance Sheet at 31 December 20.2 in vertical form, showing his:
  - i total fixed assets
  - ii working capital.

You should spend about 20 minutes on this activity.

We also learnt quite early in our studies that the real value of accounting information depends largely on how it is used. Again, consider Joe Kover's business. We saw that in the year ended 31 December 20.2, Joe made a net profit of N\$12 000. Whilst it is obviously important for Joe to know what profit he made, we also saw that this result needs to be measured against some other standard, e.g. as a percentage of his sales for the year.

We will learn how to calculate various ratios measuring profitability and liquidity. We will then consider in section D how ratio analysis can help us to judge a business' performance and lead to action for its improvement.

### Profit measurement

It is often very useful to measure gross and net profits in relation to sales. But these profits also need to be measured against other factors, such as:

- the capital employed in the business
- the profits of previous years
- the profits earned by similar businesses.

The accounting ratios are divided into the following groups:

Group	Ratio	Formula
Liquidity ratios	Current ratio	Current Assets : Current Liabilities
	Quick ratios (also called Acid test ratios)	Current Assets – Stock : Current Liabilities
Efficiency ratios	Rate of stock turn/turnover	$\frac{\text{Cost of sales}}{\text{Average stock}^1}$
	Collection period debtors	$\frac{\text{Debtors}}{\text{Credit Sales}} \times \frac{365 \text{ days}}{1}$ OR $\frac{\text{Debtors}}{\text{Credit Sales}} \times \frac{12 \text{ months}}{1}$
	Payment period creditors	$\frac{\text{Creditors}}{\text{Credit purchases}} \times \frac{365 \text{ days}}{1}$ OR $\frac{\text{Creditors}}{\text{Credit purchases}} \times \frac{12 \text{ months}}{1}$

Group	Ratio	Formula
Profitability ratios	Percentage of gross profit to sales	$\frac{\text{Gross profit}}{\text{Turnover}} \times \frac{100}{1}$
	Percentage of net profit to sales	$\frac{\text{Net profit}}{\text{Turnover}} \times \frac{100}{1}$
	Net profit as percentage of Capital Employed (also called Return on Owner's Equity)	$\frac{\text{Net Income}}{\text{Owner's equity}^2} \times \frac{100}{1}$
Investment ratios (NSSCH)	Earnings per share	$\frac{\text{Net income after tax}}{\text{No. of issued shares}} \times \frac{100c}{1}$
	Price/Earnings ratio	$\frac{\text{Stock market price}}{\text{Earnings per share}}$

<sup>1</sup> Average Stock = (Opening stock + closing stock) ÷ 2

<sup>2</sup> Owner's Equity = Capital at the beginning of the year

### Accounting ratios: liquidity

#### Hint

You will remember from Module 1 that liquidity measures how quickly assets can be turned into cash.

#### Hint

Current liabilities are amounts payable within 12 months.

#### Hint

In judging what is a reasonable ratio, a ratio exceeding 2 : 1 may indicate poor use of current assets, such as holding excessive stocks or cash.

Ratio	Answer form	Use for/comment on
Current ratio	$x : 1$	<ul style="list-style-type: none"> <li>• To check liquidity – ability to pay short-term debts</li> <li>• the norm is 2 : 1</li> <li>• Compare with previous year</li> </ul>
Quick ratio	$x : 1$	<ul style="list-style-type: none"> <li>• To check investment in stock</li> <li>• To check liquidity – ability to pay short-term debts</li> <li>• The norm is 1 : 1</li> <li>• Compare with previous year</li> </ul>

#### Current ratio (also known as the **working capital ratio**)

The formula for calculating this ratio is

$$\frac{\text{Current assets}}{\text{Current liabilities}} \quad \text{OR} \quad \text{Current assets} : \text{Current liabilities}$$

You should note that this ratio is **not** expressed as a percentage.

Again taking the example of Joe Kover's business, we can state his current ratio as

$$\frac{\text{N\$16 000}}{\text{N\$13 000}} = 1,23 : 1$$

This indicates that Joe has sufficient current assets to cover his current liabilities.

#### Quick ratio (also known as the **acid test ratio**)

In this calculation the asset of stock is excluded. This is because stock is the least liquid current asset and may be slow to turn into cash.

As we saw in Module 1, this presents quite a different picture for Joe's business, as the calculation gives:

#### Hint

Usually a ratio of 1 : 1 is regarded as safe, but much depends on the nature of the business – if sales are largely for cash, a lower ratio may well be satisfactory.

$$\frac{\text{Current assets less stock OR Current assets – stock}}{\text{Current liabilities}} : \text{Current liabilities}$$

$$\frac{\text{N\$10 000}}{\text{N\$13 000}} = 0,77 : 1$$

This ratio is also **not** expressed as a percentage.

### Accounting ratios: efficiency

Ratio	Answer form	Use for/comment on
Rate of stockturn	$x$ times per annum	<ul style="list-style-type: none"> <li>• To check liquidity and operating efficiency</li> <li>• Compare with previous year</li> <li>• Answer/result is the number of times per annum stock is replaced → high is always advantageous</li> <li>• low rate indicates stockpiling, wrong purchases, poor sales</li> </ul>
Collection period debtors	$x$ days <b>OR</b> $x$ months	<ul style="list-style-type: none"> <li>• To check liquidity</li> <li>• Compare against credit policy – short period is always better, i.e. fewer than 30 days</li> <li>• The shorter the period the better – positive effect on liquidity</li> <li>• Encourage payment by giving settlement discounts or charge interest on overdue accounts</li> </ul>
Payment period creditors	$x$ days <b>OR</b> $x$ months	<ul style="list-style-type: none"> <li>• To check liquidity</li> <li>• Compare with credit facilities acquired by the business – long period is always better, i.e. 60 to 90 days</li> <li>• Discounts can be obtained if accounts are settled on time</li> </ul>

#### Rate of stock turnover (also known as **stockturn**)

When we considered incomplete records, we learnt that the number of times a business sells and replaces its stock in a given period is known as its rate of stock turnover. We also learnt that the formula for its calculation is:

$$\frac{\text{Cost of goods sold}}{\text{Average stock}}$$

The information required for the calculation is found in the Trading Account:

- a** The cost of goods sold is:  

$$\text{Opening stock} + \text{purchases} - \text{closing stock}$$
- b** The average stock is:  

$$\frac{\text{Opening stock} + \text{closing stock}}{2}$$

If we apply this formula to Joe Kover's Trading Account, the rate of stock turnover is:

$$\frac{\text{N\$60 000}}{(\text{N\$4 000} + \text{N\$6 000} \div 2)} = \frac{\text{N\$60 000}}{\text{N\$5 000}} = 12 \text{ times}$$

We learnt that this rate is **expressed as a number** (of times in the period) – i.e. it is not expressed as either a percentage or a monetary amount. It may however be expressed to show how long (in months or days), on average, stock is held. This is quite easily done by the following formulas:

a	In months	(for Joe)	b	In days	(for Joe)
	$\frac{12}{\text{Rate of stock turnover}}$	$\frac{12}{12} = 1 \text{ month}$		$\frac{365}{\text{Rate of stock turnover}}$	$\frac{365}{12} = 30,4 \text{ days}$

This ratio is significant as the more often stock is turned over in a given period the greater will be the gross profit (assuming that the gross profit percentage remains constant).

Two other aspects of liquidity concern trading (both selling and buying) on credit. A business' working capital is affected by:

- a how quickly debtors are turned into cash, and
- b how soon creditors will need to be paid.

**Hint**

In examination questions you will be given information about the amounts of any sales and purchases on credit.

In the following examples, we will again use figures from Joe Kover's final accounts for the year ended 31 December 20.2. We will assume that:

- Of his sales total (N\$100 000), N\$80 000 was to credit customers.
- All his purchases, N\$62 000, were supplied on credit.

**Collection period for debtors**

(also known as the **debtors/sales ratio**)

To calculate the average period of credit allowed to debtors, we use the formula below to show the period in days:

$$\frac{\text{Debtors}}{\text{Credit sales}} \times \frac{365}{1}$$

In Joe's case, this gives a period of:

$$\frac{\text{N\$8 000}}{\text{N\$80 000}} \times \frac{365}{1} = 36,5 \text{ days}$$

This period needs to be watched carefully. Money tied up in debtors for long periods can create or add to a business' liquidity problems.

**Payment period for creditors**

(also known as the **creditors/purchases ratio**)

Using the same principle as for debtors, this period is found by the formula

$$\frac{\text{Creditors}}{\text{Credit purchases}} \times \frac{365}{1}$$

For Joe's business, this produces a period of:

$$\frac{\text{N\$13 000}}{\text{N\$62 000}} \times 365 = 76,5 \text{ days}$$

**Hint**

To show the same period in months, simply multiply by 12 instead of 365. (In this case, the answer is 1,2 months.)



The longer Joe takes to pay his creditors, the more cash he retains in the business, but he will need to consider other possible effects, such as loss of cash discounts or suppliers not delivering promptly.

**ACTIVITY 2**

Refer to the final accounts of Rufus Blick for the year ended 31 December 20.1 (on pages 176–177 of Module 2, Unit 8). Use the information available to calculate the following:

- a Current ratio
- b Quick ratio
- c Rate of stock turnover
- d Collection period for debtors (in days)
- e Payment period for creditors (in days)

Show your calculations.

You should complete this activity in about 15 minutes.

**ACTIVITY 3**

- 1 a What is the working capital of a business?
- b A business has the following assets and liabilities:

	N\$
Fixed assets	50 000
Current assets	18 000
Current liabilities	9 000

Calculate:

- i the working capital
  - ii the current ratio.
  - c Included in current assets is stock worth N\$12 000. Calculate the business' quick ratio.
- 2 On 31 December Ms Mkize had a business capital of N\$90 000 and a long-term bank loan of N\$10 000. Her net profit for the year ended was N\$15 000.

Calculate Ms Mkize's return on the capital employed in her business.

**ACTIVITY 4**

- 1 Complete each of the following sentences.
  - a The \_\_\_\_\_ system records details of all a business' financial transactions.
  - b The profit or loss of a business for a certain period is shown in the \_\_\_\_\_ account.
  - c A business' financial position on a certain date is shown in the \_\_\_\_\_.

- 2** State two reasons why it is important to measure the profit or loss of a business.
- 3 a** A retail business provides the following information for the year ended 31 December 20.1

	N\$
Sales	50 000
Purchases	28 000
Stock, 1 January 20.1	6 000
Stock, 31 December 20.1	4 000

Calculate the business':

- i** cost of goods sold
  - ii** gross profit
  - iii** gross profit as a percentage of sales
- b** The expenses of the business are N\$11 000 and depreciation for the year is N\$3 000.
- Calculate:
- i** the business' net profit
  - ii** the net profit as a percentage of sales.
  - iii** Explain why depreciation is shown in a Profit and Loss Account.
- 4** Al Pakah runs an engineering business and provides the following information on 31 December 20.2, his accounting year end.

	N\$
Fixed assets at cost	65 000
Depreciation on fixed assets	8 000
Stock of materials	13 000
Trade debtors	4 000
Cash at bank	1 000
Trade creditors	9 000
Capital at 1 January 20–2	60 000
Net profit for year	12 000
Cash drawings for the year	6 000

Prepare Al's Balance Sheet using the ruling on the next page. (Remember to group the items under the correct headings.)