

# RATIO ANALYSIS AND BUSINESS VIABILITY

Timeframe:	18 hours
Learning Outcome:	<ul style="list-style-type: none"><li>• Apply ratio analysis in determining the viability of a business.</li></ul>
Recommended reading:	<ul style="list-style-type: none"><li>• Marx, J., de Swardt, C., Beaumont Smith, M., and Erasmus, P. 2011, Financial Management in Southern Africa, 3<sup>rd</sup> edition. Pearson Education South Africa: Cape Town.</li><li>• Chapter 3 and 4, p 41-85</li></ul>
Section overview	In this first section, we provide you with an opportunity to refresh your knowledge and skills relating to ratio analysis and business viability – much of this you will have covered in Finance I and II. Once you have orientated yourself to the chapter you will be required to apply your analytical skills to the tasks at hand.

## “Warm-up”

The intention of this “warm-up” session is to re-orientate you to financial statement concepts and content. From there, we can apply ratio analysis tools (the content of which is derived from financial statements) to assess business viability.

Remember, a ‘going concern’ is the only viable type of business that will attract finance (e.g. a business that banks will lend money to and suppliers will extend credit to). We use ratio analysis to guide decisions that will ensure the business is (and continues to be) viable, namely a ‘going concern’.



“The financial statements normally contain comparative Income Statement figures for the past 3 years of operation and the Balance Sheet of the previous year. Summaries and key financial ratios for the preceding three to five years are often included as part of the financial statements.” (Marx, et al, 2011: 43).



### “Warm-up” Questions

1. What interest do the following have in the information derived from financial statements: shareholders, management, lenders, labour unions, investment analysts, the State, and credit bureaus?
2. Reflect on your understanding of Generally Accepted Accounting Practice (GAAP). List ten key concepts of GAAP and explain why these are essential to reliable ratio analysis.
3. Why must the changes in methods or policies be reported together with the financial statements? What are the consequences, in terms of ratio analysis, if this is not done? Identify examples to support your argument.
4. In your own words, explain the “accrual principle”. Explain the consequences, in terms of ratio analysis, if the business has consumed value but has not yet paid for this and this value is not recorded as a liability.

Five key accounts provide essential records of transactions:

- Asset accounts (reflected in the Balance Sheet)
- Liability accounts (reflected in the Balance Sheet)
- Owners' Equity/Shareholders' Interest (reflected in the Balance Sheet)
- Revenue accounts (reflected in the Income Statement); and
- Expense accounts (reflected in the Income Statement)

The financial position of the business is determined by the Balance Sheet, whereas performance (profitability) is determined from the Income Statement. To “drill down” to find the source of change we go to the individual ledger accounts of each of the above (e.g. the Creditors Ledger forms part of the Liability accounts).

As the term “Balance Sheet” infers, the equation below is impacted by business transactions:

**Assets (what the business owns) = Owners' Equity + Liabilities (who supplied the finance and how much each group supplied)**

Remember, everything that a business owns has been supplied to it by the owners or the creditors (banks, shareholders, etc.) and regardless of whether a business grows, or contracts, the equality between the assets and the claims against the assets is always maintained.



#### “Warm-up” Questions

1. Define “asset” and “liability” – brainstorm examples.
2. In your own words, and using practical examples, explain “the double-entry system”.
3. What are the consequences of not applying “the double-entry system”?

A set of financial statements includes the balance sheet and income statements as discussed above. However, two further statements are required to provide analysts with a comprehensive understanding of the viability of the business:

- Cash Flow Statement (cash receipts and payments between two consecutive Balance Sheets); and
- Statement of Retained Earnings (reconciles earning balance and net income after dividends paid).



Refresh your understanding of the four financial statements using the examples on **pages 48-59** in:

- Marx, J., de Swardt, C., Beaumont Smith, M., and Erasmus, P. 2011, Financial Management in Southern Africa, 3<sup>rd</sup> edition, Pearson Education South Africa: Cape Town.

Do not proceed further until you have complete clarity on the purpose of each of the following statements and the content of each:



1. The Income Statement;
2. The Balance Sheet;
3. The Cash Flow Statement; and
4. The Statement of Retained Earnings.

Failing to understand these will mean that you will not be able to apply financial ratios competently and hence not be in a position to determine business viability.



### “Warm-up” Questions

Please complete these warm-up questions by referring to Marx, J., de Swardt, C., Beaumont Smith, M., and Erasmus, P. 2011, *Financial Management in Southern Africa*. 3<sup>rd</sup> Edition. Pearson Education South Africa: Cape Town:

1. What is the difference between fixed (non-current) and current assets (Marx, *et al*, 2011: 53)?
2. Explain the difference between “straight-line” and “accelerated” depreciation. What is the impact of each on the Income Statement? What implications does each approach have for ratio analysis (Marx, *et al*, 2011: 49-50)?
3. What is the reason for using “original cost” rather than “present market value” when accounting for fixed assets (Marx, *et al*, 2011: 53)?
4. Explain the following statement, “When examining a Balance Sheet, it is important to bear in mind that the Rand amounts listed do not indicate the prices at which the assets can be sold, nor the cost at which they could be replaced” (Marx, *et al*, 2011: 53).
5. Explain the following statement, “The equity of the owners is a residual claim because legally the claims of creditors come first” (Marx, *et al*, 2011: 54).
6. In your own words, explain the difference between “Par value” and “Market value” of shares and why the Balance Sheet reflects the “Par value” (Marx, *et al*, 2011: 54).
7. Explain the difference between cash flows in the following activities: operating activities, investing activities, and financing activities (Marx, *et al*, 2011: 57).
8. What is a “Qualified Report”? Why is it important for analysts to scrutinise the Auditor’s Report and Directors’ Report carefully (Marx, *et al*, 2011: 59)?

Once you have completed the questions, complete the self-test question and critical-thinking exercise page 65, in Marx, de Swardt, Beaumont Smith, and Erasmus 2011,. Refer to pages 422-423 for the respective answers.

## Ratio Analysis

Ratio analysis is the measurement and evaluation of information provided in the financial statements of a business. By ratio we mean the relative size of two or more values. Ratios can be shown in different ways:

- 1: 3 (for every one blue widget there are three red widgets)
- $\frac{1}{4}$  are blue widgets and  $\frac{3}{4}$  are red widgets
- 0.25 are blue widgets (divide 1 by 4); and
- 25% are blue widgets (0.25 as a percentage)

Ratios in themselves do not convey information. However, the skilful application and interpretation of ratios provides the following benefits:

- For managerial decision making including forecasting (provide indicators, clues, and red flags to short and long-term decision making);
- Can be used across a wide array of data i.e. to assess performance, asset utilisation, liquidity, leverage, and market valuation;
- To set benchmarks for performance; and
- To assist stakeholders (internal and external to the business) determine business viability both in the short- and long-term.

The inputs in ratio analysis include the Income Statement and Balance Sheet of the business for the periods under scrutiny. This means that public companies (financial statements are made public) can be scrutinised by anyone who has an interest in doing so. For private companies, management will provide this information at their discretion (e.g. to the bank when applying for a loan).



To review your understanding of key ratios read pages 66-79 of Marx, J., de Swardt, C., Beaumont Smith, M., and Erasmus, P. 2011, *Financial Management in Southern Africa*, 3<sup>rd</sup> edition. Pearson Education South Africa: Cape Town.

Key ratios include: Industry and time series comparisons; Profitability ratios; Liquidity ratios; Asset management ratios; Debt ratios; and Investor ratios.



### Task Question – Learn by doing

1. Draw up a table, an example of which is shown below (partially completed to demonstrate what is required).
2. Using Marx, J., de Swardt, C., Beaumont Smith, M., and Erasmus, P. 2011, *Financial Management in Southern Africa*, 3<sup>rd</sup> edition, Pearson Education South Africa: Cape Town (and extended research):
  - Populate the table with profitability, liquidity, asset management, and debt management ratio information.
  - Compare your populated table with your colleague's, making improvements where necessary.
  - Note that under each ratio include the formula, the purpose of the ratio, interpretation guidelines, and where to drill down to gain insights into changes.

**TABLE 1: SAMPLE TABLE TO DOCUMENT FINANCIAL RATIOS**

Profitability Ratios	
Net profit margin	<b>Formula:</b> Net profit margin = profit after interest and tax / sales x 100
	<b>Purpose:</b> Provides bottom line profitability, e.g. a net profit margin of 6% means that for every Rand in sales the business generated 6 cents in net income.
	<b>Interpretation:</b> A reduction in the net profit margin could mean an increase in operating expenses and/or higher interest paid.
	<b>Insight:</b> To drill down into the components to find the source of the potential problem go to the following individual figures/accounts: gross profit, interest, taxation.
Gross profit margin	<b>Formula:</b>
	<b>Purpose:</b>
	<b>Interpretation:</b> Lower profit margins may not be a problem if total profits have increased (company may have changed from low volume-high margin sales strategy to a high volume-low margin strategy).
	<b>Insight:</b>
Return on investment (ROI)	<b>Formula:</b>
	<b>Purpose:</b>
	<b>Interpretation:</b>
	<b>Insight:</b>
Return on equity (ROE)	<b>Formula:</b>
	<b>Purpose:</b>
	<b>Interpretation:</b>
	<b>Insight:</b>
Liquidity Ratios	
Current ratio	<b>Formula:</b> Current ratio = Current assets / Current liabilities
	<b>Purpose:</b> This ratio is considered to be of critical importance to all stakeholders – it provides an indicator of the ability to pay short-term debt. When current liabilities exceed current assets, the business, at that point in time, is not able to pay all of its current debts. Inadequate working capital (the difference between current assets and current liabilities) has been cited as one of the major reasons for business failure.
	<b>Interpretation:</b> It is universally agreed that the ratio should be greater than 1. How much greater will depend on the business, the industry, and the perspective of the analyst (Rule of thumb 2 : 1). Of course lenders will want to see a high ratio (greater than 2 : 1), whereas a manager may want to run a leaner current ratio.
	<b>Insight:</b> Drill down to, for example, “Cash”, “Accounts receivable”, “Inventory”, and “Accounts Payable”. Always consider the current ratio together with the quick ratio (i.e. excluding inventory) – they can show quite different perspectives.

Quick ratio	Formula:
	Purpose:
	Interpretation:
	Insight:
<b>Asset Management Ratios</b>	
Inventory turnover	Formula:
	Purpose:
	<b>Interpretation:</b> Increasing inventory levels may indicate a problem if sales and profits are constant or decreasing, but will be expected if sales and profits are increasing.
	Insight:
Average collection period	Formula:
	Purpose:
	Interpretation:
	Insight:
Average payment period	Formula:
	Purpose:
	Interpretation:
	Insight:
Total asset turnover	Formula:
	Purpose:
	Interpretation:
	Insight:
<b>Debt Management Ratios</b>	
Total debt ratio	Formula:
	Purpose:
	Interpretation:
	Insight:
Debt-equity	Formula:
	Purpose:
	Interpretation:
	Insight:

<b>Times interest earned</b>	<b>Formula:</b>
	<b>Purpose:</b>
	<b>Interpretation:</b>
	<b>Insight:</b>