

AREAS OF BUSINESS ANALYSIS

Profitability is the ability of a business to use its resources (assets) to earn profits.

Liquidity is how easy it is for assets to be changed into cash as part of normal business operations. It also refers to the capacity of a business to pay debts when they become due. In order of liquidity, cash in the bank is very liquid. Inventory is not as liquid, as it has to be sold and then the money collected from the purchaser. Non-current assets are not very liquid, as it usually takes much longer to sell and collect the cash proceeds.

Leverage or *gearing* refers to the way a business has financed its assets – whether it has used the owners' own resources (equity) or borrowed funds (liabilities).

Although we will look at ratios in each area, in reality all the ratios are based on the same financial reports (Income statement and Balance sheet). Therefore, the ratios are interdependent, just as the reports are interdependent and a change in one amount (such as sales) affects other amounts (such as profit, equity and maybe debtors).

USERS' INFORMATION NEEDS

It is important to consider the needs of the person for whom the analysis is being undertaken or, in other words, the user group. By using this approach, it is possible to establish the form of analysis that is most appropriate to these needs. Users include the management of the business, owners, potential owners or investors, creditors, bankers, community interest groups, employees and government regulatory agencies.

Management needs performance management information to check how well the business is performing and plan for future business activities.

Owners use ratio analysis to see how well their investment has performed in the past and make decisions about continuing and further investment in the business.

Potential investors need information that they can use to compare this business with other businesses to see where they might invest their money safely and get the best returns.

Creditors who supply goods and services on credit need to evaluate commercial risk – that the business has the liquidity and profitability to repay outstanding amounts and pay them on time.

Bankers and other finance providers who may lend the business money need to ensure that the loans are secure and that the business has the profitability and liquidity to pay the interest and repay the principle of the loan when they are due.

Community interest groups may want to assess a business to ensure that it has the financial stability to fulfil community expectations, such as environment concerns.

Employees want to work for businesses that have long-term viability to advance their careers and make sure that current and future pay entitlements will be paid.

There are many *government regulatory authorities* that are concerned with a business's current and future financial performance. These include taxation as well as environmental, employee relations, superannuation and safety organisations.

Analysing ratios

When analysing ratios results we need to compare the results with some other benchmark. This may be:

- the same business in a previous time period
- the budget for the same time period
- another business – usually in similar industry
- an average of similar types of businesses, known as *industry average*.

Evaluating results

When *evaluating* the results it is important to look at the *rate of change* of the components of the formula and what makes up these components. This will help to explain why a ratio has increased or decreased. Mathematically, all formula consists of:

$\frac{\text{Numerator}}{\text{Denominator}}$

For example, an *increase* in the result may be caused by one of the following:

- the numerator increasing at a greater rate than the denominator

Numerator	5	6	20% increase
Denominator	10	10	equal
Result	50%	60%	

- the denominator decreasing at a greater rate than the numerator

Numerator	5	5	Equal
Denominator	10	9	10% decrease
Result	50%	55.5%	

- the numerator increasing at a greater rate than the denominator

Numerator	5	6	20% increase
Denominator	10	11	10% decrease
Result	50%	54.6%	

A decrease in the result may be caused by the opposite of any of the above.

We must also look at the financial statements and see which items that make up the numerator and denominator have changed and evaluate which of these may have caused the ratio to increase or decrease.

If the question asks for an explanation as to why the ratio has changed, students should look at the rate of change in the denominator and numerator. For example:

Gross profit	50000	60000	20%
Net sales	150000	175000	17%
Gross profit ratio	33%	34.3%	

The gross profit ratio has increased, which is *good*, because the gross profit has increased at a greater rate than the rate of increase in net sales.

This would be caused by the change (increase) in the cost of sales being relatively less than the change (increase) in net sales. This may be because the average sale price per unit has increased, the business has been able to obtain a better average purchase price per unit or been able to manage its inventory better.

Although, in this course, students will calculate and interpret the ratios one by one, in reality they are all inter-related as they come from the same set of financial reports. Therefore, a change in one can affect a change in other ratios as well. For example, changes in the *Expense ratio* cause a change in the *Profit ratio*.

As we go through each ratio we will explain if a higher result is better or worse for that business.

PROBLEMS OF WORKING FROM LIMITED DATA

Ratios are only as good as the underlying figures used in their calculation. If the accounting reports have not been prepared properly or there have been differences in

accounting methods then the ratios will also be inaccurate. People who use the ratio results in their decision-making may not make the best decision.

Problems in assessing performance and financial position when working from limited data can be influenced by the following factors:

- 1 Ratios may need to be calculated for a number of years before a trend becomes apparent.
 - 2 It is not always possible to compare ratios between companies as different accounting policies may have been chosen that will affect ratio calculations.
- Different accounting policies could be:
- cash or accrual accounting
 - balance day adjustments
 - different methods of accounting for inventory (perpetual or periodic)
 - different methods of inventory valuation (Weighted average or First in first out)
 - different depreciation methods (straight line or reducing balance) or rates of depreciation.
- 3 If only some of the information is on the reports it makes it difficult to calculate some ratios. (For example, public companies are not required to show the Cost of sales in their annual accounting reports, therefore the inventory turnover ratio cannot be calculated.)
 - 4 Ratios need to be compared to a standard to be interpreted. This may be ratios from the current period compared to:
 - ratios from another time period (past year) of the same business
 - budgeted figures for that business over the same time period
 - industry averages for similar types of business
 - another business in a similar industry.
 - 5 Ratios do not identify the causes of problems. They are based on financial reports that have already happened. What happened in the past is not always an indicator of what will happen in the future. The gross profit ratio may have fallen from 40 per cent to 30 per cent because of a fall in total sales. However, is the fall in total sales due to poor marketing, competition from other businesses or some other factor?

The current ratio is calculated by using the ending balance sheet data. However, the current ratio obtained from this data may not be typical of the current ratio of the business for much of the year as the current ratio can be improved by paying off the creditors a few days before the end of the financial period.

EXAMPLE:

Example 11.1

To help us learn about ratios we will examine the following business.

Bentley Bookshop

Income statement for the years ended 30 June

	Year 1 \$	Year 2 \$
Sales (net)	400000	500000
Less Cost of sales		
Opening inventory	50000	80000
Purchases (and purchase costs)	380000	418000
	430000	498000
Closing inventory	80000	40000
Total cost of sales	350000	458000
Gross profit	50000	42000
Add other income		
Interest received	1000	2000
Proceeds from sale of fixtures	—	1200

Total income	51000	45200
Less expenses		
Stationery supplies used	10000	11000
Other expenses	29000	31000
	39000	42000
Profit	\$12000	\$3200

Bentley Bookshop
Balance sheets as at 30 June

	Year 1 \$	Year 2 \$
Current assets		
Cash at bank	4400	—
Accounts receivables	42000	60000
Inventory	80000	40000
Prepayments	2000	5000
Total current assets	128400	105000
Non-current assets		
Property, plant and equipment	184000	205800
Investments	6000	16000
Total non-current assets	190000	221800
Total assets	318400	326800
Less Current liabilities		
Bank overdraft	—	4000
Accounts payable	26000	40000
Total current liabilities	26000	44000
Non-current liabilities		
Mortgage	100000	100000
Total non-current liabilities	100000	100000
Total liabilities	126000	144000
Net assets	192400	182800
Equity		
Capital	192400	182800
Total equity	192400	182800

Other information

Total assets for the previous year was \$309200.

PROFITABILITY

Key Concept 11.1

Profitability and profit ratio

Profitability is the ability of a business to use its resources (assets) to earn profits. (It is different from operating profit.) As it is expressed as a percentage, it is easier to compare one result with another.

The profit (margin) ratio measures the amount of operating profit as a percentage of net sales.

Formula 11.1

$$\text{Profit (Margin) ratio} = \frac{\text{Profit}}{\text{Net sales}}$$

The answer is shown as a percentage.

Net sales are gross sales (which include both cash and credit sales) less sales returns. The profit (margin) ratio is considered to be more informative than the amount of operating profit as it is a measure by which we can compare two different accounting periods or businesses. This shows the capacity of a business to control all costs (cost of sales and expenses) compared to its net sales.

Formula	Year 1	Year 2
Profit (after income tax) × 100	$\frac{12000 \times 100}{400000} = 3.0\%$	$\frac{3200 \times 100}{500000} = 0.64\%$
Net revenues		

Evaluating the results

The profit margin ratio for Bentley Bookshop has decreased, which means the business is earning less profit per sales dollar even though sales are increasing. This is not good.

For this business, profit has decreased while sales have increased by 25 per cent from \$400000 to \$500000. Both of these elements have caused the ratio to decrease.

Possible reasons for changes in the profit ratio	
Increases	Decreases
• Greater rate of increase in profit than the rate of increase in sales	• Greater rate of increase in sales than the rate of increase in profit
• Higher sales prices, expenses constant	• Higher expenses, no increase in sales price
• Increase in volume of sales, no change in purchase prices per unit or other expenses	• Decrease in volume of sales, no change in purchase prices per unit or other expenses
• Decreases in expenses due to better management	• Increases in expenses due to poor management
• Increase in gross profit, expenses constant	• Decrease in gross profit, expenses constant

Formula 11.2

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net sales}}$$

The answer is shown as a percentage.

The *gross profit ratio* measures the amount of profit as a percentage of net sales. This ratio is considered to be more informative than just the amount of gross profit as it is a measure by which we can compare two different accounting periods or businesses. This shows the capacity of a business to control the total cost of sales compared to its net sales. The total cost of sales includes not only purchases but both opening and closing inventory. Other costs relating to cost of purchasing goods for sale, such as customs duty and freight inwards, should be included as part of the cost of sales.

Bentley Bookshop

Income statement (extract) for the years ended 30 June

	Year 1	Year 2
Sales	404000	503500
Less Sales returns	4000	400000
Less Costs of sales		
Opening inventory	50000	80000
Plus purchases	372000	409000
Customs duty	5000	5500

Freight inwards	3000		
Subtotal	430000		
Less Closing inventory	80000		
Total cost of sales			
Gross profit	350000	40000	458000
	<u>50000</u>		<u>42000</u>

Formula	Year 1	Year 2
$\text{Gross profit} \times 100$ Net revenues	$\frac{50000 \times 100}{400000} = 12.5\%$	$\frac{42000 \times 100}{500000} = 8.4\%$

The gross profit ratio is decreasing, which means the business is earning less gross profit per sales dollar, even though sales are increasing. This is not good and may be caused by a number of factors. In the example above, gross profit has decreased, while net sales have increased. Both of these changes would cause the ratio to decline.

Possible reasons for changes in the gross profit ratio	
Increases	Decreases
• Greater rate of increase in gross profit than the rate of increase in sales	• Greater rate of increase in sales than the rate of increase in gross profit
• Higher sales prices, cost of sales constant	• Higher cost of sales, no increase in sales price
• Increase in volume of sales, no change in purchase prices per unit	• Decrease in volume of sales, no change in purchase prices per unit
• Higher closing stock, causes lower cost of sales, higher gross profit	• Lower closing stock, causes higher cost of sales, lower gross profit
• Decrease in purchase costs, sales constant	• Increase in purchase costs, sales constant
• Selling a higher proportion of higher-margin stock items	• Selling a higher proportion of lower-margin stock items

Formula 11.3

$$\text{Expense ratio} = \frac{\text{Total expenses}}{\text{Net sales}}$$

The answer is shown as a percentage.

The *expense ratio* measures the amount of expense as a percentage of net sales. This ratio is considered to be more informative than the amount of total operating expenses as it is a measure by which we can compare two different accounting periods or businesses. This shows the capacity of a business to control all expenses compared to its net sales.

Formula	Year 1	Year 2
$\text{Total expenses} \times 100$ Net sales	$\frac{39000 \times 100}{400000} = 9.75\%$	$\frac{42000 \times 100}{500000} = 8.4\%$

The expense ratio is decreasing, which means the business is incurring fewer expenses per sales dollar, even though sales are increasing. This is good.

Possible reasons for changes in the expense ratio	
Increases	Decreases
• Greater rate of increase in expenses than the rate of increase in sales	• Greater rate of increase in expenses than the rate of increase in sales
• Higher sales prices, expenses constant	• Higher sales prices, expenses constant
• Increase in volume of sales, no change in expenses per unit	• Decrease in volume of sales, no change in expenses per unit
• Lower closing stock, causes higher cost of sales, lower gross profit and profit	• Higher closing stock, causes lower cost of sales, higher gross profit and profit

Formula 11.4

$$\text{Rate of return on assets ratio} = \frac{\text{Profit}}{\text{Average total assets}}$$

The answer is shown as a percentage:

$$\text{Average total assets} = (\text{this year's total assets} + \text{last year's total assets}) \div 2$$

The *rate of return on assets* measures the profit of the business as a percentage of average total assets. It shows how effective the use of these assets has been in earning profit. Average assets can be calculated as the assets owned at the beginning of the year plus assets at the end of the year divided by two. If the *rate of return on assets* is greater than the *rate of interest on a loan*, then it may be worthwhile to borrow funds to expand business operations.

Formula	Year 1	Year 2
Operating profit		
Average total assets	$\frac{12000 \times 100}{(309200 + 318400)/2} = 3.82\%$	$\frac{3200 \times 100}{(318400 + 326800)/2} = 1.0\%$

For Bentley Bookshop the rate of return on assets has decreased, which is not good. It means the operating profit has decreased while the average total assets have increased. This business could not justify borrowing money to fund further assets until it has improved its profits.

Possible reasons for changes in the rate of return on assets ratio	
Increases	Decreases
<ul style="list-style-type: none"> Greater rate of increase in profit than the rate of increase in average total assets Higher sales, expenses constant, assets used constant Increase in profit as explained above 	<ul style="list-style-type: none"> Greater rate of increase in average total assets than the rate of increase in profit Higher amount of assets, profit steady or declining Decrease in profit as explained above

LIQUIDITY RATIOS

Liquidity ratios assist in assessing the business's ability to meet its financial commitments in both the short and long term.

Working capital ratio

Formula 11.5

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

The answer is shown as a percentage or as a ratio.

The working capital ratio measures the capacity of a business to pay its short-term debts over the next 12 months using its current assets. The current ratio can be improved by paying off creditors just before the balance date. The ideal ratio is greater than 1:1 but preferably less than approximately 2:1. The items that make up current assets do not earn any income (0%), so if the ratio is more than 2:1, although the business would be very liquid, it indicates a 'lost opportunity' to invest more of the surplus in income earning investments.

Formula	Year 1	Year 2
Current assets Current liabilities	$\frac{128400}{26000} = 493\%$	$\frac{105000}{44000} = 238\%$

This means that for every dollar of liabilities the business has \$2.38 (4.93) in assets to pay the amount. The liquidity has decreased as the rate of increase in current liabilities is

greater than the rate of increase in current assets. Although the ratio has decreased, there are still adequate liquid assets to meet known liabilities due in the next 12 months. Both years represent a 'lost opportunity' to invest surplus current assets in income-earning non-current assets. The business should try to reduce accounts receivable and inventory to improve this ratio.

Possible reasons for changes in the working capital ratio	
Increases	Decreases
<ul style="list-style-type: none"> Greater rate of increase in current assets than the rate of increase in current liabilities Higher cash at bank, inventory accounts receivable and current liabilities constant Just before balance date using cash at bank to pay off creditors or GST summary 	<ul style="list-style-type: none"> Greater rate of increase in current liabilities than the rate of increase in current assets Current assets constant but creditors, accrued expenses, GST collections and short-term loans increasing Leaving excess amounts owing to creditors

Quick asset ratio

Formula 11.6

$$\text{Quick asset ratio} = \frac{\text{Current assets less inventory and prepayments}}{\text{Current liabilities less bank overdraft}}$$

The answer is shown as a percentage or as a ratio.

The quick asset ratio is also known as the *liquid* or *acid test ratio*. This is a modified form of the current ratio. It measures the capacity of the business to pay its liabilities in the short term, usually in the next month or two, using quickly available assets. From the current assets inventory and prepayments are excluded. As stock is sold, it will be replaced by new stock and it is therefore difficult in the short term to reduce the overall amount. Prepayments are excluded because although a current asset, the money has already been paid out and is therefore not available to help pay liabilities. The bank overdraft is excluded from the total current liabilities because, under a normal agreement with the bank, as long as the business keeps under the maximum overdraft limit, it does not have to be repaid in the next one to three months.

Year 1	Year 2
$\frac{128400 - 80000 - 2000}{26000} = 178\%$	$\frac{105000 - 40000 - 5000}{44000 - 4000} = 150\%$

This means that the business does have sufficient 'quick' assets to pay its immediate liabilities. The ratio has decreased from the first year to the second, indicating that the business's liquidity is decreasing, which, although adequate, is a trend that is not good.

Possible reasons for changes in the quick asset ratio	
Increases	Decreases
<ul style="list-style-type: none"> Greater rate of increase in quick assets than the rate of increase in short-term liabilities Higher cash at bank and inventory accounts receivable and current liabilities constant Just before balance date using cash at bank to pay off creditors or GST summary 	<ul style="list-style-type: none"> Greater rate of increase in short-term liabilities than the rate of increase in quick assets Current assets constant but creditors, accrued expenses, GST collections and short-term loans increasing Leaving excess amounts owing to creditors

Key Concept 11.2

Liquidity essential to a business

The single biggest requirement of an operating business is to maintain adequate liquidity to meet its financial obligations as they fall due.

LEVERAGE RATIO

Key Concept 11.3

Debt as a form of funding

For businesses to operate and grow they need funding, not all of which is possible from equity capital. Borrowing money for business purposes is financially responsible. However, borrowing too much increases the financial risk and quickly leads to loss of liquidity and profitability.

Debt to equity ratio

Formula 11.7

$$\text{Debt to equity} = \frac{\text{Total liabilities}}{\text{Total equity}}$$

The answer is shown as a percentage.

The *debt to equity ratio* measures how the business has funded its assets by comparing the total liabilities to the amount of contributed equity. This ratio measures gearing – the greater the company relies on borrowed funds, the less financially safe it is. If the profit decreases or the costs of borrowing increase this will put added pressure on the business's financial stability. If a company's liabilities exceed equity it starts to become highly geared. Some companies have liabilities as high as 95 per cent of assets with only five per cent of equity, but these are highly risky financially. (See the section dealing with sources of finance in Chapter 1.)

Formula	Year 1	Year 2
Total liabilities	$\frac{126000}{192400} \times 100 = 65.5\%$	$\frac{144000}{182800} \times 100 = 78.8\%$
Equity (end)		

Bentley Bookshop's debt to equity ratio has increased, which is not good, although it is still not highly geared. However, the increase in gearing is not a good trend. In modern business practice if a business could only rely on owner's capital and retained earnings to expand, its growth would be limited. Borrowing money helps a business grow. However, borrowing too much increases the business's financial risk. When a business's debt to equity ratio exceeds 100 per cent it begins to be heading into a financially riskier situation. See also the rate of return on assets to evaluate if a loan is viable.

Possible reasons for changes in the debt to equity ratio

Increases

- Greater rate of increase in total liabilities than the rate of increase in total equity
- Higher drawings relative to profit, reducing equity

Decreases

- Greater rate of increase in total equity than the rate of increase in total liabilities
- Higher profits and relatively lower drawings

SUMMARY

Ratio	Simple interpretation	If ratio is increasing:	If ratio is decreasing:	Caused by changes in:
Profit	The bigger the more profitable	Profit is increasing at a higher rate than the rate of increase in net sales	Profit is increasing at a lower rate than the rate of increase in net sales	Sale price Sale volume Purchase price Inventory Expenses
Gross profit	The bigger the more profitable	Gross profit is increasing at a higher rate than the rate of increase in net sales	Gross profit is increasing at a lower rate than the rate of increase in net sales	Sale price Sale volume Purchase price Inventory

Expense	The smaller the better	Expenses are increasing at a higher rate than the rate of increase in net sales	Expenses are increasing at a lower rate than the rate of increase in net sales	Sales Expenses
Working capital	The bigger the more financially safer	Current assets are increasing at a higher rate than the rate of increase in Current liabilities	Current assets are increasing at a lower rate than the rate of increase in Current liabilities	Cash Debtors Creditors Inventory Balance day adjustments
Quick asset	The bigger the more financially safer	Current assets are increasing at a higher rate than the rate of increase in Current liabilities	Current assets are increasing at a lower rate than the rate of increase in Current liabilities	Cash Debtors Creditors Inventory Accruals
Debt to equity	The smaller the more financially stable	Liabilities are increasing at a higher rate than the rate of increase in Equity	Liabilities are increasing at a lower rate than the rate of increase in Equity	Creditors Loans Bank overdraft Capital Drawings Profit

Test your knowledge

- Explain some of the limitations of using ratio analysis to evaluate financial statements.
- Evaluating financial statements usually requires a comparison of two or more sets of statements. What are the different types of financial statement that can be used for comparison?
- What is meant by the terms liquidity, profitability and leverage?
- Which ratios would you use to evaluate a firm's profitability?
- What ratios would you use to evaluate a business's liquidity?
- What is the purpose of using ratio analysis?
- What ratio would you prepare to assess a business's financial stability?
- If interest rates were to increase, which ratios would this effect?
- Explain the difference between profit and profitability.
- Explain the difference between liquidity and profitability.

Test your understanding

Topic guide

- Profit margin: 11.1–11.5
- Gross profit: 11.1–11.5
- Expense: 11.1–11.5
- Return on assets: 11.6–11.8
- Current ratio: 11.9–11.11
- Quick ratio: 11.12
- Debt/equity: 11.13–11.16
- All ratios: 11.17–11.20

11.1 Adventure Catering provided the following income statements:

Adventure Catering Income statements for the years ended

	30/6/09 \$	30/6/10 \$
Sales	220000	240000
Less Cost of sales	124000	127000
Gross profit	96000	113000
Less Expenses	55000	67000
Operating profit	41000	46000

Required

- a Calculate the profit (margin) ratios for each of the years.
- b Explain whether or not the business has improved its operations from 2009 to 2010.
- c Suggest reasons why the ratios have changed.

11.2 Beijing Bicycles provided the following income statements:

Beijing Bicycles Income statements for the years ended

	30/6/09 \$	30/6/10 \$
Sales	356000	428000
Less Cost of sales	187000	196000
Gross profit		
Less Expenses	85000	46000
Operating profit		

Required

- a Calculate the gross profit and operating profit for each year.
- b Calculate the profit margin ratios for each of the years.
- c Explain whether or not the business has improved its operations from 2009 to 2010.
- d Suggest reasons why the ratios have changed.

11.3 Albany Art Supplies provided the following income statements:

Albany Art Supplies Income statement for the years ended

	30/6/09 \$	30/6/10 \$
Sales	130000	140000
Less Cost of sales	87000	109000
Gross profit	43000	31000
Less Expenses	21000	24000
Operating profit	22000	7000

Required

- a Calculate the gross profit ratios for each of the years.
- b Explain whether or not the business has improved its operations from 2009 to 2010.
- c Suggest reasons why the ratios have changed.

11.4 Brookton Brakes provided the following income statements:

Brookton Brakes Income statement for the years ended

	Budget \$	Actual \$
Sales	67000	74000
Less Cost of sales	46000	49000

Gross profit		
Less Expenses		14000
Operating profit		15000

Required

- a Calculate the gross profit and operating profit for each year.
- b Calculate the expense ratios for the budget and actual results.
- c Explain whether the business has improved its actual operations compared to its budgeted projections.
- d Suggest reasons why the ratios have changed.

11.5 A client has asked you to help them make a decision about which of these two businesses has the better profitability.

Income statements for the year ended 30 June 2012

	Carnamah Cycles \$	Coorow Cycles \$
Sales	67000	77000
Less Cost of sales		
Gross profit	21000	30000
Less Expenses		
Operating profit	5000	13000

Required

- a Calculate the cost of sales and the expense for each year.
- b Calculate the gross profit ratios for both businesses.
- c Calculate the profit (margin) ratios for both businesses.
- d Calculate the expense ratios for each of the years.
- e Explain whether the business has improved its actual operations compared to its budgeted projections.
- f Suggest reasons why the ratios have changed.

11.6 Calculate return on assets ratios from the following data:

	2013 \$	2014 \$	2015 \$
Operating profit	4000	5000	7000
Total assets	46000	47000	48000

Required

- a Calculate the return on assets ratios for the years ended 2014 and 2015.
- b Explain whether the business improved its profitability from 2014 to 2015.
- c Suggest reasons why the ratios have changed.
- d If the bank is prepared to give a loan at 11 per cent per annum is it a good idea for the firm to borrow in order to purchase more assets?

11.7 Calculate return on assets ratios from the following data:

	2016 \$	2017 \$	2018 \$
Operating profit	6000	7000	8000
Total assets	66000	57000	68000

Required

- Calculate the return on assets ratios for the years ended 2017 and 2018.
- Explain whether the business has improved its profitability from 2017 to 2018.
- Suggest reasons why the ratios have changed.
- Is the trend of profitability for this business increasing or decreasing?

11.8 Analyse the following return on assets ratio data:

	2013 \$	2014 \$	2015 \$
Sales	20000	22000	
Less Expenses	16000		18000
Operating profit		5000	
Total equity	26000	28000	7000
Total liabilities	20000	19000	
Total assets	46000		48000

Required

- Complete the table above by calculating the missing figures.
- Calculate the return on assets ratios for the years ended 2014 and 2015.
- Explain whether the business has improved its profitability from 2014 to 2015.
- Suggest reasons why the ratios have changed.
- If the bank is prepared to give a loan at 11 per cent per annum is it a good idea for the firm to borrow in order to purchase more assets?

11.9 The owners of the Bunjil Bakery have provided the following information:

	Budget \$	Actual \$
Current assets		
Cash at bank	2000	
Accounts receivable	14000	12000
Less Provision for doubtful debts	(100)	(200)
Inventory	6000	7000
Current liabilities		
Bank overdraft	—	1900
Accounts payable	19000	17000

Required

The owners have asked for you to calculate the current ratio for both the budget and actual results and to comment on whether the firm's actual liquidity has improved compared to what was planned. Why has the actual liquidity changed?

11.10 The owners of Morawa Motors have provided the following information:

	30/6/09 \$	30/6/10 \$
Current assets	120000	130000
Current liabilities	97000	109000

The average current ratio for this type of business is 150 per cent.

Required

- Calculate the current ratio for each year.
- Comment on whether or not the business's liquidity has improved and how the business compares to the industry average.

11.11 The following information belongs to a local business

Badgingarra Builders

Balance sheets as at 30 June 2010

	Budget \$	Actual \$
Current assets		
Cash at bank		11000
Accounts receivables	13000	25000
Inventory	16000	17000
Prepayments	2500	2700
Total current assets	31500	55700
Current liabilities		
Bank overdraft	1300	—
Accounts payable	26000	32000
Accrued expenses	2900	4800
Total current liabilities	30200	36800

Required

- Calculate the quick asset ratio comparing the budget to the actual result.
- Comment on whether or not the business's liquidity has improved.

11.12 The following information belongs to a local business

Caron Cartage Contractors

Balance sheets as at 30 June

	2009 \$	2010 \$
Current assets		
Cash at bank		12000
Accounts receivable	12000	30000
Inventory	15000	13000
GST outlays	2000	2000
Total current assets	29000	57000
Non-current assets		
Property, plant and equipment	84000	102000
Investments	4000	6000
Total non-current assets	88000	108000
Total assets	117000	165000
Less current liabilities		
Bank overdraft	1200	—
Accounts payable	25000	33000
GST collections	2000	6000
Total current liabilities	28200	39000
Non-current liabilities		
Loan	70000	80000
Total non-current liabilities	70000	80000
Total liabilities	98200	119000
Net assets	18800	46000

Required

- Calculate the current ratio for both years.
- Calculate the quick asset for both years.
- Explain whether the change in the ratios indicates that the business's liquidity has improved.
- What would be the change in the ratios for 2010 if the business paid off the net amount owing for GST?
- What would be the change in the ratios for 2010 if the business paid off \$10000 owing to accounts payable?

11.13 The owners of Northampton Nurseries provided the following information.

	30/6/09 \$	30/6/10 \$
Total assets	130000	140000
Total liabilities	63000	89000
Total equity	67000	51000

The average debt to equity ratio for this type of business is 150 per cent.

Required

- Calculate the debt to equity ratio for each year.
- Comment on whether or not the business's gearing has improved and how the business compares to the industry average.

11.14 The owners of Perenjori Party Planners provided the following information.

	30/6/09 \$	30/6/10 \$
Total liabilities	89000	94000
Total equity	77000	65000

The average debt to equity ratio for this type of business is 130 per cent.

Required

- Calculate the debt to equity ratio for each year.
- Comment on whether or not the business's gearing has improved and how the business compares to the industry average.

11.15 The owners of Broome Bus Lines provided the following information.

	30/6/19 \$	30/6/20 \$
Total assets	630000	740000
Total liabilities	265000	
Total equity		152000

The average debt to equity ratio for this type of business is 125 per cent.

Required

- Complete the table showing total equity and total liabilities.
- Calculate the debt to equity ratio for each year.
- Comment on whether or not the business's gearing has improved and how the business compares to the industry average.

11.16 If net sales changed and all other amounts stayed constant, what would be the effect on the following ratios (an increase or decrease)?

Ratio	Increase in sales	Decrease in sales
Profit		
Gross profit ratio		
Expense		

Return on assets		
Current ratio		
Quick assets ratio		
Debt to equity		

11.17 The following financial statements for the business of Cookies and Cakes are shown below:

Cookies and Cakes**Income statement for the year ended 30 June 2014**

	\$	\$
Sales income	90000	
Proceeds of sale of assets		18000
Cost of sales:		
Opening inventory	48000	
Purchases	56000	
	104000	
Closing inventory	56000	48000
Depreciation		9000
Interest paid		1200
Other expenses		43800
Profit		(102000)
		\$6000

Comparative balance sheets as at June

	2014	2013
Accounts receivable	17000	\$14000
Accumulated depreciation – buildings	(5000)	(3000)
Accumulated depreciation – sales equipment	(15000)	(9000)
Buildings	60000	60000
Cash at bank	\$9000	–
Equipment	36000	30000
Inventory	56000	48000
Land	20000	40000
	<u>\$178000</u>	<u>\$180000</u>

Accounts payable	26000	24000
Bank overdraft	–	10000
Capital	152000	146000
	<u>\$178000</u>	<u>\$180000</u>

Required

A Cheff, the owner of Cookies and Cakes, had been concerned about the size of the bank overdraft at the beginning of the year. Having examined the financial statements of the business, he asked you to comment on the firm's rate of return on assets and to evaluate any alterations in the working capital and liquidity of the business. Calculate the following ratios and comment briefly on the items mentioned by J Cheff:

- working capital/current ratio
- quick asset ratio
- debt to equity ratio
- rate of return on assets.

11.18 The summarised Income statement of Valentines Vineyards for the years ended 30 June 2009 and 30 June 2010 are shown below.

	2010	2009
Sales (net)	170000	150000
Less Cost of sales	75000	68000
Gross profit	95000	82000
Less Operating expenses	32000	25000
Profit	63000	57000

Extracts from the Balance sheets are shown below.

	2010	2009
Current assets	25000	20000
Current liabilities	18000	18000
Non-current assets	105000	102000
Non-current liabilities	62000	55000
Prepayments	5000	4000
Bank overdraft	1500	-
Inventory	7000	6000

Required

Calculate the following ratios for the year ended 30 June 2010 by completing the table below:

Ratio	Ratio formulae	Industry average	2010
Gross profit ratio	Gross profit Net sales	54.66%	
Profit ratio	Profit Net sales	38%	
Expense ratio	Total expenses Net sales	16.66%	
Rate of return on assets ratio	Profit Average total assets	34%	
Working capital ratio	Current assets Current liabilities	156%	
Quick asset ratio	CA – inventory and prepayments CL – bank overdraft	120%	
Debt to equity ratio	Total liabilities Total equity	15%	

Analyse the changes in the profitability, liquidity and leverage of Valentines Vineyards for the 12 months ended 30 June 2010, using the information provided in the question and the ratios as calculated above.

11.19 Palomino's Riding Academy was started by Chris Palomino on 1 July 2010 with capital of \$60000. The business has been going well and he now wants to expand by borrowing an additional \$90000 at ten per cent per annum to buy some stables.

The following has been extracted from his business reports for each of the years ended 30 June:

	2012	2011
Current liabilities	50000	50000
Non-current loan	100000	-
Owner's equity	60000	60000
Total liabilities and equity	\$210000	\$110000
Profit before interest	50000	22000
Less Mortgage interest	12000	-
Profit to owner	38000	22000
Sales	230000	110000

Required

- Based on the information available, calculate Chris's profitability and leverage/gearing for both of the years 2011 and 2012.
- Explain the results of these ratio calculations to Chris and advise him of the risks involved in his plan to borrow a further \$90000.

11.20 Sunrise Ballooning needs your help in evaluating its business. It has had difficulty in effectively managing its working capital. It also has experienced declining sales. Below is information extracted from Balance sheets and Income statements for the past three years.

Income statement

	2014	2013	2012
Sales (all credit)	895000	1050000	1200000
Cost of sales	535000	630000	720000
Gross profit			
Less Expenses	224000	217000	325000
Operating profit			

Balance sheet

	2014	2013	2012
Current assets			
Accounts receivable	181000	182000	206000
Inventory	95000	77000	70000
Prepaid expenses	2500	1500	2800
Current liabilities			
Bank overdraft	98000	62000	35000
Accounts payable	235000	195000	176000
Accrued expenses	35000	28000	30000
Total assets	1200000	1340000	1287000
Total liabilities	567000	489000	497000
Net assets			