Interpretation / Ratios Analysis

It is necessary to analyze and interpret the final accounts of a business in order to assess its performance and progress. Analysis consists of a detailed examination of the Information in a set of final accounts of a business. Interpretation can include comparing the results with other similar businesses or comparing the results with previous years or with the targets and budgets.

<u>Profit Markup vs. Profit Margin</u>

Markup – Cost
Margin – Sales

$$\frac{\text{Markup}}{100 + \text{Markup}} \qquad\qquad \frac{\text{Margin}}{100 - \text{Margin}}$$

Note: Profit Markup will be always greater that Profit Margin because Markup is applied on cost which is lower than sales figure. We have to apply greater%age on lower figure.

1). Profitability Ratios

Gross Profit Margin (Gross profit to revenue) $= \dfrac{\text{Gross Profit}}{\text{Revenue}} \times 100$

Gross Profit Mark up $= \dfrac{\text{Gross Profit}}{\text{Cost of Sales}} \times 100$

Net Profit to Sales Ratio (Net Profit margin) $= \dfrac{\text{Net Profit}}{\text{Revenue}} \times 100$

Return on Capital Employed (ROCE) $= \dfrac{\text{Net Profit for the year}}{\text{Capital Employed}} \times 100$

[Capital Employed = Owner's capital + Non Current liabilities]

or

[Total Assets – Current Liabilities]

2) Liquidity Ratios

Current ratio (Working Capital Ratio) = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

Quick Ratio (Acid Test / Liquid Ratio) = $\frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$

Rate of Inventory Turnover (times) = $\frac{\text{Cost of Sales}}{\text{Average Inventory}}$

OR

Inventory turnover (In Days) = $\frac{\text{Average Inventory}}{\text{Cost of Sales}} \times 365$

Trade Receivable Turnover (Days) = $\frac{\text{Trade Receivables}}{\text{Credit Sales}} \times 365$

Trade Payables Turnover (Days) = $\frac{\text{Trade Payables}}{\text{Credit Purchases}} \times 365$

Expenses to Sales Ratio = $\frac{\text{Expenses}}{\text{Net sales}} \times 100$

TURNOVER / Net Sales = Sales – Return Inwards **OR** Cost of sales + Gross profit Gross Profit = Net Sales – Cost of sales **OR** Net Profit + Expenses	**Cost of Sales** = Net sales – Gross profit OR Inventory turnover x Average stock OR Opening Inventory + Purchases – Closing Inventory Net Profit = Gross Profit – Expenses Expenses= Gross Profit – Net Profit

Solvency / Liquidity Ratios

In order to find the Information that indicates whether or not the business will be able to pay its creditors, expenses, loans falling due at correct time are known as liquidity ratios or solvency ratios.

Working Capital = Current assets – Current liabilities

It calculates the capital available to meet the day-to-day expenses

Current Ratio
It shows that haw much current assets are available against current liabilities.

Quick / Acid Test Ratio

It shows that haw much quick assets are available against current liabilities.

Reasons for decrease in <u>Current Ratio</u>

- Current asset decreases, without a corresponding decrease in a current liability
- Current liability increases without a corresponding increase in a current asset
- Inventory levels are low
- High levels of trade payables
- Using up of a prepaid expense (debit to expense, credit to prepaid exp)
- Recording an expense, such as payroll, or taxes, with an increase with the credit side of the entry recorded to a current liability.

Reasons for decrease in <u>Quick (Acid Test) Ratio</u>

- Inventory levels are high resulting in high trade payables
- The business has no cash available to meet trade payables
- High levels of trade payables
- Cash or accounts receivable decrease, without a corresponding decrease in current liabilities
- increase in a current liability without a corresponding increase in cash or accounts receivables
- Cash spent to acquire fixed assets
- Cash spent to pay off a long term debt or to pay dividends

Why <u>Quick ratio is better than Current ratio?</u>

- The inventory may be difficult or take a long time to sell.
- Inventory may deteriorate or become obsolete.
- Inventory is two stages away from cash.
- Debtors are one stage away from cash.
- Only liquid assets are included in acid test ratio

Reasons for decrease in Liquidity

- Purchase of Non-Current Assets
- Cash drawings
- Loss from business operations
- Bank overdraft funds used to help finance purchase of non-current asset
- Non/late payments by trade receivables
- Fall in cash sales
- Loan may have been paid off
- Rate of inventory turnover may have decreased
- Early payment to trade payables to avail cash discounts
- Increase in inventory
- Increase in expenses e.g. rent, wages etc

How liquidity / Bank balance could be improved

- Bring in more personal capital / Issue of Shares
- Consider raising funds through bank loans
- Reduce personal drawings
- Carry out review of non-current assets with a view to selling off surplus to requirements
- Chase late payers or offer settlement discounts
- Delay payments to trade payables
- Sales on cash basis
- Adopt policies to make business profitable
- Sell inventory faster

Reasons for decrease in stock turnover

- Increased mark up / selling price on goods
- No advertising and market awareness
- Reduced quality of the goods purchased
- Reduced variety and range of goods for sale
- Stock increased during the year because sale is slow
- Some stock may be obsolete and remains in stores.
- Sales activity may be slower because of competition.
- Changed circumstances may mean closing stock figures are higher in current year affecting ratio
- Falling demand due change in fashion / taste / better products available
- Stocks may be piling up and not being sold or keeping stock which is more than required

How can <u>stock turnover</u> be improved?

- Reduce inventory levels
- Reduce mark-up / Prices to be more competitive
- Promotions / advertisements / bargain offers
- Offer cash discounts to encourage sales
- Only replace stock when needed
- Dispose of obsolete stock

Drawbacks of holding <u>too much inventory</u>

- Deterioration / Damage of inventory
- Obsolescence
- Space required for storage
- Cost of storage (holding costs)
- Risk of theft
- Opportunity cost of money tied up
- Liquidity problems

Reasons for decrease in <u>Gross Profit Margin</u>

- Reduction in Selling price due to competition, low demand or to win sales orders
- Increase in Cost of sales / purchases due to less supply, new supplier, increase in demand, different quality of material
- An increase in profit in absolute terms does not imply a rise in profitability of sales
- A decrease in selling price with no decrease in cost of goods sold
- A decrease in selling price with a less than proportionate decrease in cost of goods sold
- An increase in cost of goods sold with no increase in selling price
- An increase in cost of goods sold with a less than proportionate increase in selling price
- Over valuation of opening inventory
- Under valuation of closing inventory
- Poor stock control / damage / stolen / obsolete
- Change in sales mix means low sales of high margin products or vice versa

Reasons for decrease in <u>Net Profit Margin</u>

- Expenses have increased at a faster rate than sales
- Reduction in gross profit margin
- Increase in gross profit margin but more than proportionate increase in expenses

What does <u>GP Margin</u> tell us? How can it be used!

- Enables business to see how well it has performed
- How profitable sales for the year are
- Results can be compared with previous years, competitors, similar business, industry average, targets
- It may act as a warning sign since a fall in the ratio may indicate a fall in profitability of sales
- It shows the%age gross profit on sales earned

Reasons for decrease in <u>Net Profit ($)</u>

- Reduction in revenue
- Increase in cost of sales
- Reduction in GP Margin
- Increase in expenses

Reasons for decrease in <u>ROCE (Return on Capital Employed)</u>

- Reduction in net profit due to decrease in SP / increase in COS / Expenses
- Increase in capital employed due to more equity / debt capital invested
- A lower net profit has been earned in relation to capital invested
- Inefficient / lack of control over expenses / costs

<u>Limitations of accounting ratios</u>

- Ratios are based on accounting data and firms differ in their treatment of such items as depreciation, inventory valuation, taxes etc
- Ratios reflect book values not market or fair values
- Does not take size differences of companies into account
- Identify problem areas but not causes
- Inflation can distort financial figures
- Companies can use window dressing to manipulate their financial statements
- Different divisions may need comparison to different industry averages
- Financial accounting information is affected by estimates and assumptions
- Ratio analysis explains relationships between past information while users are more concerned about current and future information.
- Non-Financial Factors are equally important which are not highlighted using financial ratios

RATIOS ANALYSIS

Q1 Lai Yee provided the following information.

	$
Profit from operations (before bank loan interest)	36 000
Capital	200 000
Trade payables	50 000
Trade receivables	45 000
8% Bank loan (repayable 2024)	100 000
Bank	60 000 Dr
Closing inventory	75 000
Cost of sales	480 000
Revenue	600 000

REQUIRED

(a) Calculate to **one** decimal place:

Ratio	Workings	Answer
Percentage gross profit/sales		
Percentage net profit/sales		
Return on capital employed (ROCE)		
Working capital ratio (Current ratio)		

(b) Comment upon the sufficiency of the working capital ratio (current ratio).

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Lai Yee is considering ways in which she might improve her return on capital employed (ROCE). She is considering the following proposals.

1 Introduce additional capital of $10 000.

2 Repay half of the 8% bank loan.

3 Sell $20 000 non-current assets, saving $3000 in depreciation.

4 Convert $25 000 of the 8% bank loan into a bank overdraft at 12% interest per annum.

REQUIRED

(c) Complete the following table, by placing a tick (✓) in the appropriate box, to show the effect on the profit for the year and the capital employed.

The first item has been completed as an example.

Proposals	Profit for the year			Capital employed		
	increase	decrease	no effect	increase	decrease	no effect
1			✓	✓		
2						
3						
4						

Lai Yee is also considering improving her profit for the year by:

1 revaluing her business premises to the market value of $120 000 (cost $100 000)

2 removing the provision for doubtful debts.

REQUIRED

(d) Name which accounting concept would not be complied with if Lai Yee implemented her proposals.

Proposal 1 ....

Proposal 2 ....[2]

[Total: 22]

Q2 Demetris is a trader, buying and selling goods on credit. The following information was available on 31 March 2014.

	$
Revenue	300 000
Inventory 31 March 2014	50 000
Purchases	170 000
Capital	100 000
Bank	5 000 Dr
Trade payables	60 000
Trade receivables	11 000
Gross profit/sales	20%

REQUIRED

(a) Calculate the:

(i) Cost of goods sold.

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(ii) Inventory at 1 April 2013.

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(b) Suggest **two** possible effects of holding too much inventory.

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(c) Calculate, to **two** decimal places, the:

(i) Working capital ratio (current ratio)

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(ii) Quick ratio (acid test ratio)

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(d) Comment upon the sufficiency of the working capital ratio (current ratio).

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During the year ended 31 March 2014, Demetris took the following actions.

1 Repaid a $40 000 long term bank loan.
2 Purchased $20 000 of non-current assets on credit.
3 Sold inventory for $20 000 on credit (cost $15 000).

REQUIRED

(e) Complete the following table showing the effect on the current assets, current liabilities and the working capital ratio (current ratio) for each of the actions **1 to 3** above. The first item has been completed as an example.

	Current assets	Current liabilities	Working capital ratio (current ratio)
1 Repaid a $40 000 long term bank loan.	*Decreased $40 000*	*No effect*	*Decreased*
2 Purchased $20 000 of non-current assets on credit.			
3 Sold inventory for $20 000 on credit (cost $15 000).			

[6]

Q3 Danish provided the following information.

For the year ended 31 July 2015

	$
Revenue	380 000
Purchases	295 000
Profit for the year	35 000
Gross profit margin	25%

At 31 July 2015

	$	
Inventory	65 000	
Trade receivables	42 000	
Trade payables	52 000	
Bank	13 000	debit
Expenses accrued	8 000	

REQUIRED

(a) Calculate the following:

	Workings	Answer
Inventory at 1 August 2014		
Rate of inventory turnover (to two decimal places)		
Expenses paid in the year ended 31 July 2015		
Working capital ratio (current ratio)		
Quick ratio (acid test ratio) (to two decimal places)		

[12]

Danish is considering the following proposals to improve his working capital.

1 Sell excess non-current assets for $4000
2 Sell old inventory costing $15 000, for $9000 cash
3 Allow a trade receivable 5% cash discount for early payment of a debt of $10 000
4 Pay expenses accrued of $8000
5 Bring additional capital into the business, motor vehicle $5000 and cash $1000

REQUIRED

(b) Complete the table, to show the effect on the working capital of **each** proposal. The first one has been completed as an example.

Proposal	Working capital (Increase, decrease, no effect)	Amount $
1 Sell excess non-current assets for $4000	*Increase*	*4000*
2 Sell old inventory costing $15 000, for $9000 cash		
3 Allow a trade receivable 5% cash discount for early payment of a debt of $10 000		
4 Pay expenses accrued of $8000		
5 Bring additional capital into the business, motor vehicle $5000 and cash $1000		

Q4 The following information relates to the business of Lili.

	$
Revenue	200 000
Inventory 1 October 2013	15 500
Inventory 30 September 2014	24 500
Rate of inventory turnover	8 times
Net profit/sales	7%

REQUIRED

(a) Calculate the following.

	Workings	Answer
cost of sales		
purchases		
percentage gross profit to sales		
expenses		
profit for the year		

Lili's inventory of $24 500 needs to be adjusted for the following.

1. 5 items costing $10 each had been omitted from the inventory.
2. 10 items costing $25 each were damaged and could only be sold for $15 each.
3. 4 items were included in the inventory at the list price of $300 each, having been marked up by 50%.
4. 1 item costing $20 was recorded in error in the inventory as $200.

REQUIRED

(b) Complete the following table showing the effect that **each** adjustment will have upon the inventory valuation at 30 September 2014. The first item has been completed as an example.

Adjustment	Effect on inventory value		Value $
	increase	decrease	
1	✓		*50*
2			
3			
4			

Q5 Jia provided the following information.

	$	
At 1 April 2016		
Opening inventory	27 000	
For the year ended 31 March 2017		
Expenses	35 000	
Revenue	240 000	
At 31 March 2017		
Trade payables	20 000	
Trade receivables	16 000	
Bank	2 000	Debit
Closing inventory	21 000	

Jia uses a mark-up of 25%.

REQUIRED

(a) Calculate the following for the year ended 31 March 2017.

(i) Cost of sales

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(ii) Profit for the year

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(b) Calculate the following ratios to **two** decimal places. The previous year's ratios are shown in the last column.

	Workings	31 March 2017	31 March 2016
Gross profit/sales (Gross profit margin)			15.00%
Rate of inventory turnover			5.33 times
Working capital ratio (Current ratio)			3.15:1
Quick ratio (acid test ratio)			0.32:1

[8]

(c) Comment on the change in the following ratios calculated in **(b)** over the two years.

(i) Gross profit/sales (Gross profit margin)

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(ii) Quick ratio (acid test ratio)

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[4]

Jia is considering ways in which she might improve her profit and working capital in the following year. She is considering the following proposals:

Proposal 1 Introduce additional capital of $20 000 in cash.

Proposal 2 Charge depreciation on non-current assets at 15% per annum instead of 25% per annum.

Proposal 3 Take out a 5-year 6% bank loan of $30 000.

REQUIRED

(d) Complete the following table by placing a tick (✓) to show the effect of **each** proposal on Jia's profit for the year and working capital. The first item has been completed as an example.

	Profit for the year			Working capital		
	increase	decrease	no effect	increase	decrease	no effect
Proposal 1			✓	✓		
Proposal 2						
Proposal 3						

[4]

[Total: 20]

Q6 The trial balance of Juan, **after** preparing the trading account section of the income statement, was as follows:

Juan
Trial Balance at 30 April 2017

	Dr	Cr
	$	$
Gross profit		60 000
General expenses	25 000	
Non-current assets		
Cost	40 000	
Provision for depreciation		13 000
Bank		25 000
Trade receivables	15 000	
Trade payables		32 000
Inventory at 30 April 2017	60 000	
Capital		10 000
	140 000	140 000

Additional information for the year ended 30 April 2017

1 Mark-up on cost of sales was 20%.

2 Depreciation on non-current assets for the year was $8000 and is yet to be provided.

REQUIRED

(a) Calculate the:

(i) Revenue

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(ii) Profit for the year

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(iii) Working capital

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(b) Calculate the following ratios correct to **two** decimal places.

	Workings	Answer
Percentage of profit for the year to revenue (profit margin)		
Working capital ratio (current ratio)		
Quick ratio (acid test ratio)		

[6]

(c) Explain to Juan why the quick ratio (acid test ratio) is a better measure of liquidity than the working capital ratio (current ratio).

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(d) Comment upon the sufficiency of Juan's liquidity level. Explain the reason for your comment.

Comment

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Reason

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(e) Suggest **three** ways in which Juan might increase his bank balance.

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3..[3]

[Total: 20]

Q7 Lache's accounting year ends on 31 December. The following information is available.

	2015	2014
	$	$
Revenue	750 000	600 000
Expenses	200 000	175 000
Profit for the year	100 000	50 000
Capital	250 000	250 000
Bank loan repayable 30 December 2014	–	120 000
Bank loan repayable 30 December 2020	80 000	–
Inventory	60 000	260 000
Trade receivables	22 000	40 000
Trade payables	50 000	60 000
Other receivables	1 500	2 500
Other payables	8 500	3 500
Bank	28 000 Debit	40 000 Credit

REQUIRED

(a) Calculate the following ratios for 2015. Comparative figures for 2014 are shown. Your answers should be calculated to **one** decimal place.

	Workings	Answer	2014
Gross profit to revenue (Gross profit margin)			37.5%
Return on capital employed (ROCE) based on profit for the year			20%
Current ratio (Working capital ratio)			2.9:1
Quick ratio (acid test ratio)			0.4:1

[12]

(b) Using the ratios calculated in **(a)** and the information provided, comment on the:

(i) profitability over the two years

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(ii) liquidity over the two years.

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[Total: 20]

Q8 The following information was available from the books of Linrae.

Totals for the year ended 30 September 2017

	$
Revenue	240000
Cost of sales	180000
Expenses (excluding depreciation)	35000
Depreciation	10000

Balance at 30 September 2017

Linrae's capital	100000

REQUIRED

(a) Calculate the following for the year ended 30 September 2017. Show your answers to **two** decimal places.

	Workings	Answer
Percentage mark-up		
Percentage profit for the year to revenue (profit margin)		
Return on capital employed (ROCE)		

[6]

On 1 October 2017 Linrae took a 10% bank loan for $50 000 to expand her business. The loan is repayable in 5 years.

At the end of the year's trading on 30 September 2018 the following information was available.

1 Revenue for the year was $308 000.

2 The mark-up for the year was 40%.

3 Expenses for the year (excluding bank loan interest and depreciation) had increased by $4000.

4 The bank loan interest had not been paid.

5 Depreciation for the year had increased by 20%.

6 Linrae's capital at 30 September 2018 was $110 000.

REQUIRED

(b) Prepare the income statement for the year ended 30 September 2018.

Linrae
Income Statement for the year ended 30 September 2018

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(c) Explain why Linrae's capital had increased over the year even though she had not introduced any additional capital.

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(d) Calculate the following for the year ended 30 September 2018. Show your answers to **two** decimal places.

	Workings	Answer
Percentage profit for the year to revenue (profit margin)		
Return on capital employed (ROCE)		

[4]

(e) Analyse the profitability of Linrae's business for the two years ended 30 September 2017 and 30 September 2018.

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[Total: 20]

2. Hira is a trader. Her financial year ends on 31 December.
Hira provided the following information.

For the year ended 31 December 2018	$
Sales (all on credit)	118 000
Purchases (all on credit)	94 000
Cost of sales	94 350
Profit for the year before interest	14 100
Profit for the year after interest	9 900

At 31 December 2018

Non-current assets at book value	266 000
Inventory	8 500
Trade receivables	7 250
Bank overdraft	4 150
Trade payables	6 600

Hira allows her credit customers 14 days' credit. The trade receivables collection period calculated at 31 December 2017 was 18 days.

Hira is allowed 28 days' credit by her credit suppliers. The trade payables payment period calculated at 31 December 2017 was 30 days.

REQUIRED

(a) **(i)** Calculate the trade receivables collection period for the year ended 31 December 2018. Round up your answer to the next whole day.

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(ii) Suggest **two** ways in which the trade receivables collection period may be improved.

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(b) **(i)** Calculate the trade payables payment period for the year ended 31 December 2018.
Round up your answer to the next whole day.

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(ii) Suggest **two** ways in which the change in the trade payables payment period may affect Hira.

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(c) Calculate the following to **two** decimal places.

(i) Percentage of gross profit to revenue (gross profit margin)

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(ii) Profit for the year to revenue (net profit margin)

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(iii) Return on capital employed (ROCE)

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