

Unit 3.5 Profitability and liquidity ratio analysis

Question 3.5.1 Calculating profitability

(a) JKL Ltd.'s Profit & Loss Account for years ended 31 December (\$'000s)

	<u>Year 2</u>	<u>Year 1</u>
Sales revenue	1 000	850
Cost of goods sold	500	450
Gross profit	500	400
Expenses	100	40
Net profit before interest and tax	400	360

- Gross profit = Sales revenue – Cost of goods sold
- Year 2 Gross profit = \$1 000 000 – \$500 000 = \$500 000
- Year 1 Gross profit = \$850 000 – \$450 000 = \$350 000

- Expenses = Gross profit – Net profit
- Year 2 Expenses = \$500 000 – \$400 000 = \$100 000
- Year 1 Expenses = \$400 000 – \$360 000 = \$40 000

Award 1 mark for each correct answer.

(b) Year 2 GPM = \$500 k / \$1 000 k = 50.0%

Year 1 GPM = \$400 k / \$850 k = 47.05%

Year 2 NPM = \$400 k / \$1 000 k = 40.0%

Year 1 NPM = \$360 k / \$850 k = 42.35%

- The GPM in year 2 shows that for every \$100 of sales, \$50 is gross profit.
- The NPM in year 2 shows that for each \$100 sold, \$40 is generated as net profit (so expenses accounted for the other 10%).
- Whilst the GPM has improved, the NPM (the relatively more important figure for profitability) has declined; due to the large increase in expenses from \$40 000 to \$100 000 (150% increase).
- Overall, these figures show healthy profitability at JKL Ltd., although only limited information is provided.

Award up to 4 marks for calculating the correct answers for GPM and NPM, with full working out shown.

Award 5–6 marks if the calculations are full and accurate, with a detailed explanation. There is effective use of business management terminology.

- (c) The answer might include a definition of profitability (not profit). Profitability ratios examine the profit of a firm in relation to other figures, such as sales revenues in order to assess the financial performance of the business. Further information might include: forecast profits and sales figures, or the amount of capital invested in the JKL Ltd. Other information could include the use and analysis of:
- Return on Capital Employed (ROCE)
 - Benchmarking data
 - Looking at profit in relation to the size of JKL Ltd.
 - Objectives and targets of JKL Ltd.

Award 1–2 marks if the commentary is vague and/or incoherent. Answers might appear in an unexplained list-like format.

Award 3–4 marks if the commentary details further information that could be used to determine the profitability of JKL Ltd. There is good use of business management terminology.

Question 3.5.2 Calculating ROCE

- (a) Year 2 ROCE = $\$400 \text{ k} / \$1,000 \text{ k} = 40\%$
Year 1 ROCE = $\$360 \text{ k} / \$800 \text{ k} = 45\%$

Award 1 mark for each correct answer, up to 2 marks.

Award 3 marks if both correct answers are given, along with the full working out.

- (b) ROCE is an efficiency ratio that measures the financial performance of a firm compared to the amount of capital invested in the business. In Year 2, JKL Ltd. returned 40% from the value of the firm, i.e. for every \$100 invested in the firm \$40 was generated as profit (before interest and tax). The ratio fell by 5% from the previous year, suggesting poorer use of the firm's capital, i.e. deteriorating efficiency.

Profitability can be judged by comparing to bank interest rates (40% is relatively high when compared to any bank deposit rate) or benchmarking against JKL Ltd.'s nearest rivals. The ROCE for both years is likely to be significantly higher than the return from savings offered by banks/financial institutions.

Award 1–2 marks if only one reason is explained clearly or the answer lacks detail and/or depth. The answer might appear in a list-like format, without any explanations.

Award 3–4 marks if there are good explanations of what the figures suggest about the efficiency and profitability of JKL Ltd. Relevant examples are used in the context of the case study.

Question 3.5.3 Calculating ratios

- (a) Year 2 Current Ratio = $700 / 300 = 2.33 : 1$
Year 1 Current Ratio = $500 / 200 = 2.5 : 1$

$$\text{Year 2 Acid Test} = (700 - 350) / 300 = 1.17 : 1$$

$$\text{Year 1 Acid Test} = (500 - 250) / 200 = 1.25 : 1$$

Award *1–2 marks* if only the correct answers are given without any working out, or if only the working out and correct answer is given for one of the ratios.

Award *3–4 marks* if the correct answers are given along with the working out for both the current and acid test ratios.

(b) JKL Ltd.'s liquidity position is quite favorable. In both years, the current ratio shows that there is sufficient working capital in the firm, e.g. in Year 2 for every \$1 of current liability, JKL Ltd. has \$2.33 of current assets. The slight fall in the ratio is not necessarily indicative of poorer liquidity as too high a current ratio means the firm is not using its resources efficiently (such as holding too much cash or stocks of textiles).

Likewise, the acid test reveals that JKL Ltd.'s liquidity is favourable because it exceeds the recommended minimum of ratio 1:1 (textiles stocks are likely to be quite liquid), although the figures have deteriorated slightly.

Award *1–2 marks* if the commentary is vague and/or incoherent. The answer might appear in an unexplained list-like format.

Award *3–4 marks* if there is a detailed commentary on the liquidity position of JKL Ltd. There is appropriate use of business management terminology.

(c) Considerations of what else might be needed to judge the liquidity position of JKL Ltd. include:

- JKL Ltd.'s cash holdings have increased by 300% (from \$50 000 to \$200 000); this might help to improve liquidity but there is a potentially large opportunity cost of holding too much cash.
- JKL Ltd. will also want to investigate the cause of the 50% increase in its short-term liabilities (such as overdrafts and creditors) which have reduced its liquidity ratios.
- Stocks have also increased, thereby reducing the value of the acid test in Year 2. Further information on the type of stock is needed, such as whether most of the stock is work-in-progress or finished.
- It might also be useful to know the stock turnover, i.e. how fast JKL Ltd. sells its products. A high stock turnover rate might mean that the current ratio can be indicative of the firm's liquidity position.
- The relationship with debtors and suppliers can also give some insight to the liquidity position of the firm. Debtors are more likely to pay on time and suppliers are more likely to grant credit if there is a trusting professional relationship.

Award *1–2 marks* if only one reason is explained clearly or the answer lacks detail and/or depth. The answer might appear in an unexplained list-like format.

Award *3–4 marks* if there is a detailed explanation of what other information would be needed to judge the liquidity position of JKL Ltd. Relevant examples are used in the context of the case study and there is effective use of business management terminology.

Question 3.5.4

(a) Gross profit shows the difference between a firm's sales revenues and its cost of goods sold (COGS). Net profit, however, is calculated after deducting overheads (expenses) from the gross profit figure, i.e. it considers both direct and indirect costs in the calculation of profit. Gross profits will, therefore, always be greater than net profits.

Award *1–2 marks* if the two terms are outlined although the answer lacks some detail/clarity.

Award 3 marks if both terms are clearly understood and a clear distinction is made. There is proficient use of business management terminology.

- (b) It is important for potential investors to consider non-financial factors when making investment decisions because not all choices are made on quantitative grounds. For example:
- There is no information regarding the type of industries in which D. McCleod & Co. and B. Cooper & Son operate; indeed the two firms might not even operate in the same industry!
 - Labour turnover and factors such as the level of staff motivation can affect the firm's long-term costs and profitability (both are important considerations for potential investors).
 - Past financial performance is not necessarily indicative of future performance so caution should be taken when basing investment decisions purely on quantitative factors.
 - Financial / quantitative analysis may not be reliable due to window dressing of accounts and historical data being used, i.e. the current situation for both firms is likely to have changed.
 - Consumer confidence levels will also affect investment decisions, irrespective of what financial ratios might reveal, e.g. a looming recession might be enough to put off investors. Investment decisions tend to be more reserved during a period of recession or when the level of consumer and business confidence is declining.
 - The reputation of the two firms is likely to have an influence on investors' decisions as corporate social responsibility and ethics are factors that increasingly affect the customer's perception (and hence sales and profitability) of a business.
 - Aims and objectives of the two firms are likely to be considered, e.g. D. McCleod & Co. might be expanding, which explains its declining acid test ratio.

Award 1–2 marks if the commentary is vague and/or incoherent. The answer might be presented as an unexplained list.

Award 3–4 marks if there is a detailed commentary on why it is important for potential investors to consider non-financial factors when making investment decisions. There is effective use of business management terminology.

(c) *Note:* SL students are not expected to use the gearing ratio in this question.

Ratio	Firm	Commentary
GPM	McCleod & Co.	Gross profit has fallen by 20% (from a GPM of 50% to 40%).
	B. Cooper & Son	Gross profit has fallen by just 10% (from a GPM of 50% to 45%); hence B. Cooper & Son has performed better in terms of its ability to control COGS.
NPM	McCleod & Co.	NPM is stable at 20% but this means with a reduced GPM that overhead control is improving; overheads accounted for a 30% differential (comparing the GPM and NPM) but only 20% by the Year 3.
	B. Cooper & Son	NPM has improved by 5.2% (from a GPM of 19% to 20%) and is quite stable. B. Cooper & Son's ability to control overheads has also improved but D. McCleod & Co. performed better.

ROCE	McCleod & Co.	The ROCE has fallen by 6.7% but the rate is still quite attractive with a yield of 14%.
	B. Cooper & Son	The ROCE has improved by 25% so seems very attractive if such performance can be maintained. B. Cooper & Son's ROCE overtakes that of D. McCleod & Co. in the 3rd year and seems attractive with its 15% return.
Quick ratio	McCleod & Co.	The firm has a high acid test ratio in Years 1 and 2, but improves with the ratio falling to 1.5 (although we have no information about the type of industry that D. McCleod & Co. operates in).
	B. Cooper & Son	The firm's quick ratio has fluctuated and is close to the minimum recommended 1:1, so liquidity issues at B. Cooper & Son could be a concern for investors.

Award 1–3 marks if the answer lacks details/depth. A limited understanding of the demands of the question is shown.

Award 4–5 marks if there is an analysis of at least two of the given financial ratios.

Award 6–7 marks if there is an examination of at least three of the given financial ratios. There is good use of business management terminology.

Award 8–9 marks for a thorough examination of the financial ratios with a justified conclusion for which firm is the better investment, with evidence of critical thinking.
