Unit 3.6 Efficiency ratio analysis [HL Only]

Question 3.6.1 Calculating eficiency ratios

(a)

	Year 2	**Year 1**
Stock turnover	(350 ÷ 500) × 365 = 255.5 days	(250 ÷ 450) × 365 = 202.7 days
	or	
	500 ÷ 350 = 1.43 times	450 ÷ 250 = 1.8 times
Debtor days	(150 ÷ 1,000) × 365 = 55 days	(200 ÷ 850) × 365 = 86 days
Creditor days	(300 ÷ 500) × 365 = 219 days	(200 ÷ 450) × 365 = 162 days

Award up to *2 marks* for each ratio that is correctly calculated, with the working out shown in full.

(b) There are three efficiency ratios in this question and hence any development in these should help to improve the overall efficiency position of JKL Ltd. Some examples are given below:

- Stock turnover – Hold less stock, e.g. introduce a system of Just-in-time (JIT) or introduce lean production to the production process at JKL Ltd.
- Debtor days – Improved credit control, e.g. if credit control is too loose, then this could lead to liquidity problems despite the preferential credit terms to customers.

- Creditor days – Given the improved cash position of JKL Ltd., suppliers will probably query why the firm is taking so much longer to pay its debts. The ratio suggests that the credit period is rather generous especially as JKL Ltd. has sufficient working capital and liquidity to meet these debts. This could, therefore, dampen the relationship with its suppliers.

Award up to *2 marks* for each factor considered to improve the firm's efficiency position of JKL Ltd.

(c) The term 'efficiency position' should be defined. The efficiency position of JKL Ltd. can be judged by assessing the firm's efficiency ratios, i.e. its stock turnover, debtor days and creditor days:

- Stock turnover – JKL Ltd.'s stock is taking longer to turn over (or turning over at a lower rate), i.e. there is less efficiency.
- Debtor days – JKL Ltd.'s debtors are, on average, paying much earlier (from 86 days to 55 days), suggesting that there is improved credit control.
- Creditor days – JKL Ltd. is taking significantly longer to pay its creditors (from 162 days to 219 days), which might dampen its relationship with suppliers in the long run.
- Overall then, it seems that the firm's liquidity position has probably deteriorated; although more information and data is needed to make any firm conclusions.

Award *1–3 marks* if the answer lacks detail and is rather generalized. There is limited understanding of the demands of the question.

Award *4–6 marks* if the answer shows some understanding of the efficiency position of JKL Ltd., with appropriate analysis of the ratios. The answer lacks depth of explanation in some areas, or does not consider all three measures of JKL Ltd.'s efficiency ratios.

Award *7–8 marks* if there is a detailed answer that considers the efficiency position of JKL Ltd. by examining all three ratios. There is effective use of business management terminology throughout the answer and evidence of critical thinking.

Question 3.6.2 Calculating gearing ratios

(a) Debentures are a source of external long-term (loan) finance for which interest is paid to the debenture holder. Debenture holders do not usually have ownership or voting rights in the organization.

Award *1 mark* if the description shows some understanding of debentures.

Award *2 marks* if the description shows a clear understanding of debentures, with appropriate use of business management terminology.

(b) Gearing ratio for JKL Ltd.

Year 2	Year 1
250k ÷ 1 000 k	250k ÷ 800 k
= 25%	**= 31.25%**

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

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

(c) The gearing ratio is a long-term liquidity ratio that measures the percentage of a firm's capital employed that comes from long-term liabilities, such as debentures. JKL Ltd. has less than 50% gearing so this is considered to be relatively safe, albeit very limited information is given about the firm.

JKL Ltd. has lower gearing in Year 2, meaning that it is less vulnerable to any increases in interest rates, i.e. external borrowing through the use of debentures represents less risk. However, there is a need to benchmark this ratio with the industry norm before any strong conclusions can be made about JKL Ltd.'s liquidity position.

Award *1–2 marks* if the commentary is vague and shows a limited understanding of the demands of the question. The answer might appear in an unexplained list-like format.

Award *3–4 marks* if there are good explanations of what the figures suggest about the long-term liquidity position of JKL Ltd. There is good use of relevant business management terminology.

(d) Answers should consider both the costs and benefits of high gearing. For example, having high gearing during times of rising interest rates is likely to be risky (even if the economy is doing well) as the higher loan repayments will hinder the firm's working capital. However, high gearing might be necessary for a firm that lacks internal funds to finance growth and evolution.

In the case of JKL Ltd. the fall in its gearing ratio (from 31.25% to 25%) is not necessarily a good thing, e.g. could JKL Ltd. afford to have higher gearing to finance expansion, especially as it has both higher net profit and retained profit in Year 2.

Award *1–2 marks* if the answer is vague with some, albeit limited, understanding shown.

Award up to *3–4 marks* for a good explanation of whether high gearing can be beneficial, although the answer lacks depth in some areas and/or is presented as a one-sided argument.

Award *4–6 marks* for a two-sided argument that considers both costs and benefits of high gearing for firms such as JKL Ltd. There is appropriate use of relevant business management terminology.

Question 3.6.3 Ocean Deco Limited

(a) External finance can be defined as sources of funding that come from outside the business. In the case of Ocean Deco Ltd. this might include the $80 000 mortgage from the bank.

Award *1 mark* if there is some understanding of external finance shown, although the answer might lack clarity.

Award *2 marks* if external finance is clearly defined, with the use of a relevant example.

(b)

(i) Gross profit margin (GPM):

- Gross profit = (532 – 248)
- GPM = 284 / 532
- GPM = **53.38%**

Award *1 mark* if the GPM is correct but there is no working out shown or the correct procedure is used but with an incorrect answer.

Award *2 marks* if the correct GPM is given with accurate working out shown.

(ii) Return on capital employed (ROCE):

- Net profit = Gross profit *less* expenses
- Net profit = 284 – 132 = 152
- Capital employed = 88 + 80 = 168
- ROCE = 152 / 168
- ROCE = **90.48%**

Award *1 mark* if the ROCE is correct but there is no working out shown or the correct procedure is used but with an incorrect answer.

Award *2 marks* if the correct ROCE is given with accurate working out shown.

(iii) Gearing ratio:

- Gearing ratio = loan capital / capital employed
- Long-term liabilities (i.e. mortgage) = 80
- Gearing = 80 / (88 + 80)
- Gearing = **47.62%**

Award *1 mark* if the gearing ratio is correct but there is no working out shown or the correct procedure is used but with an incorrect answer.

Award *2 marks* if the correct gearing ratio is given with accurate working out shown.

(c) The ratios suggest several reasons why Shanghai Commercial Ltd. might be interested in taking over Ocean Deco Limited, including:

A gross profit margin of over 53% means that for every $100 of sales revenue, around $53 turns out to be gross profit (or costs of goods sold accounted for $47 for every $100 of sales). The higher the GPM figure the better the financial performance of the organization, so perhaps the 53% GPM is sufficiently high to attract the attention of Shanghai Commercial Ltd.

ROCE ratio shows the financial performance (based on net profits) from the amount of capital invested in the firm. Hence, the ROCE is an indicator of the profitability of the organization. The higher the ROCE figure, the better it is for the business. In the case of Ocean Deco Limited, an ROCE figure of over 90% suggests that for every $100 invested in the company, over $90 profit is generated. Clearly then, this is attractive to buyers such as Shanghai Commercial Ltd.

However, the gearing ratio is perhaps rather high at almost 48%. This ratio shows that for every $100 of capital employed, the organization has interest-bearing loan capital of $48. Whilst Shanghai Commercial Ltd. might have some concerns with this, it might simply be due to the expansion plans at Ocean Deco Limited.

Award *1–3 marks* if the answer shows some understanding of the financial ratios and their impact on the decision of Shanghai Commercial Ltd. The answer might be presented in a list-like format with little, if any, application.

Award *4–5 marks* if the answer shows a thorough understanding of the financial ratios and their impact on the decision of London Commercial Ltd. There is effective use of business management terminology and appropriate application shown.

(d) Quantitative (numerical) factors that might need to be considered include:

- The current ratio (Current assets ÷ Current liabilities) is 85 / 62 = 1.37 : 1. This suggests the Ocean Deco Ltd. is quite solvent, although the ratio is perhaps a little too close to the (absolute) minimum of 1:1. An insolvent company is more likely to sell the business to a potential buyer.
- The firm's gearing ratio is high at almost 48%. If Ocean Deco Ltd. expects to face long-term liquidity problems (affecting its ability to repay the $80,000 mortgage or perhaps due to rising interest rates in the economy), then maybe the takeover bid becomes more attractive to the owners.
- The ROCE is an impressive 90.48%, suggesting that Morten Wincent is more likely to want to keep the business. As a result, the hostile takeover bid from Shanghai Commercial Ltd. is likely to be rejected by the owners.
- Similarly, a GPM ratio of over 53% might suggest to Morten Wincent that Ocean Deco Ltd. has good profitability and therefore he might choose not to sell or even hold out for a more favourable offer.

Quantitative (non-numerical) factors that might need to be considered include:

- The potential conflict between Morten Wincent and his son. Would it be better for his son to back down and allow his father to make the decision or should Morten listen to his son and avoid confrontation?
- Morten's son might be correct in believing that Ocean Deco Ltd. can no longer compete with the larger rivals; in which case it may be a good time to sell to Shanghai Commercial Ltd. whilst a 'lucrative' deal is being offered.
- The emotional value of keeping the family business might be regarded as far more important (to Morten Wincent at least) than any possible financial gain from selling the company that he helped to set up.

Award *1–3 marks* for a vague answer that shows a limited understanding of the demands of the question. The answer is probably unbalanced and may be presented as an unexplained list.

Award *4–5 marks* for an answer that considers both numerical and non-numerical factors in some detail. The answer might lack application at the lower end. Any recommendation made may lack justification.

Award *6–7 marks* for an answer that considers both numerical and non-numerical factors in detail. A justified recommendation has been made to the owners of Ocean Deco Ltd. which addresses whether they should accept or reject the takeover bid.

Question 3.6.4 ACS Playframes Limited

(a) Fixed assets are resources owned by a business that are not intended for resale within the next twelve months but used repeatedly in the production process, e.g. delivery vehicles, buildings, land and registered trademarks. They are relatively illiquid assets.

Award *1 mark* if the answer shows some understanding of fixed assets, although the answer might lack clarity or sufficient depth.

Award *2 marks* if fixed assets is clearly defined, with the use of an example related to the case study likely to be used.

(b) Profit and loss account for *ACSPL*, for year ended 31 March:

	$
Sales revenue	3 500 000
less Cost of sales	900 000
Gross profit	2 600 000
less Expenses	600 000
Net profit	2 000 000

Award *1–2 marks* if only limited understanding is shown. The P&L account might be presented in an incoherent format.

Award *3–4 marks* if the construction of the P&L account is coherent although there are two or more errors. An appropriate title might be missing. Apply the own figure rule (error carried forward) where appropriate. At the top end of the band, one error is permissible.

Award *5 marks* for the accurate construction of the profit and loss account, with an appropriate title used.

(c)

(i) Current ratio = Current assets ÷ Current liabilities

So, 600 ÷ 550 = 1.09 : 1

Award *1 mark* if the current ratio is correct but there is no working out shown or if the correct procedure is used but with an incorrect answer.

Award *2 marks* if the correct current ratio is given with accurate working out shown.

(ii) Gearing ratio = Long-term liabilities ÷ Capital employed

Capital employed = Long-term liabilities + Retained profit + Shareholders' funds

So, \$3.2m ÷ (\$3.2m + \$0.85m + \$3.5m) = 42.38%

(iii) Working capital issues (problems) occur when a business has insufficient net current assets (working capital) in the short term, i.e. within twelve months of the balance sheet date. Longer term liquidity issues occur when a firm experiences high gearing during times of escalating interest rates (since the commitment to long-term liabilities drains the firm's financial resources).

Hence, the current ratio could be used to assess the short-term liquidity position of ACSPL. In this case, ACSPL's current ratio is 1.09 :1, i.e. for every \$1 of current liabilities, ACSPL only has \$1.09 worth of liquid assets. In fact, fixed assets account for over 99% of net assets employed, i.e. ACSPL lacks liquidity.

Students might also choose to use the gearing ratio in this question. In this case, ACSPL's gearing is quite high at 42.38%. The necessity to repay long-term creditors with interest means that ACSPL's level of gearing could make the company quite vulnerable since the economy is experiencing higher interest rates.

Award *1–2 marks* for a limited response with some understanding shown. There are omissions in the explanation and/or the explanation lacks depth.

Award *3–4 marks* for a good explanation of why ACSPL faces working capital and liquidity problems, using the current ratio. Appropriate reference is made to the stimulus material and there is good use of business management terminology.

(d) Possible financial strategies might include:

- Obtaining an overdraft to deal with the lack of working capital – this might not be too difficult as ACSPL has been experiencing growth for several years. However, interest rates are on an upwards trend.
- As interest rates are increasing, cash outflow to finance ACSPL's long-term liabilities (which represent more than 42% of the company's sources of finance) will increase, thereby adding further pressure to the company's liquidity position.
- Tighter credit control – ACSPL might limit trade credit to its customers (hotels, schools and local government) or reduce the credit period. This would enable the company to receive its cash sooner (thereby improving its working capital and liquidity position). It is unlikely that ACSPL could offer incentives for customers to pay by cash, given the high price of play frames.
- Examine the poor current ratio of 1.09 : 1, i.e. how might current assets (cash, debtors and stocks) be improved whilst controlling cash outflows on current liabilities (tax, overdrafts, dividends and creditors)?
- Investigate whether the $600 000 worth of expenses could be reduced in the future. This would help to improve net cash flows for ACSPL. Similarly, it might look for different suppliers of its raw materials and components to reduce direct costs of production, thereby also improving profit margins.
- ACSPL could be experiencing problems with overtrading, i.e. expanding too quickly without the necessary financial and human resources to do so (the firm has fixed assets worth $7.5m but only employs 5 full-time staff). Hence, one strategy would be to limit its rate of expansion.

Award *1–2 marks* for a generalized answer that lacks details of the options available to deal with liquidity problems.

Award *3–4 marks* for a good examination of several options available to deal with liquidity problems that ACSPL faces. Application is missing or is used superficially.

Award *5–6 marks* for a thorough examination of the options available to deal with the working capital and liquidity problems that ACSPL faces. Appropriate business management terminology and examples are used, in the context of ACSPL.
