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3. Finance and accounts / 3.6 Efficiency ratio analysis (HL)

The big picture

An efficient business is one that is able to keep its costs and inputs low as it produces its goods or services. Efficiency also relates to how well a business is able to keep funds moving through the working capital cycle, which you learned about when studying liquidity ratios in Section 3.5.3 (/study/app/business-hl/sid-351-cid-762729/book/liquidity-ratios-id-39308/). The efficiency ratio measures how well a business has been able to manage its ongoing operations in the working capital cycle, which is shown again in **Figure 1**.
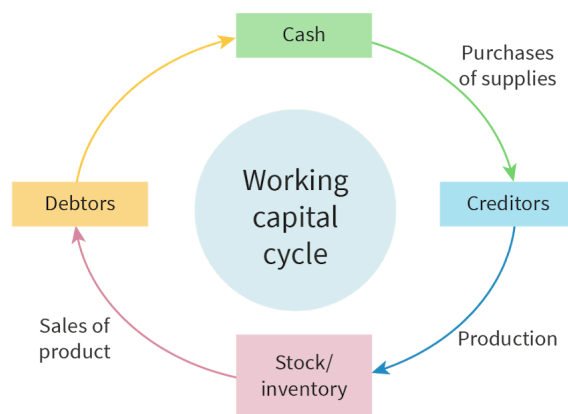

Figure 1. Efficiency ratios measure how well the business is managing its working capital cycle.

👁 More information for figure 1

The image is a diagram illustrating the working capital cycle. At the center, it has a circle labeled "Working capital cycle." This central circle is surrounded by several colored boxes connected through arrows that form a clockwise circular flow, representing the cycle.

At the top of the cycle is a green box labeled "Cash." An arrow from this box points right to a blue box labeled "Creditors," indicating the process of "Purchases of supplies."

The arrow continues from the "Creditors" box downwards to a pink box labeled "Stock/inventory," representing "Production."

Next, an arrow moves from "Stock/inventory" towards a yellow box at the bottom labeled "Debtors," labeled "Sales of product."

Finally, the cycle completes with an arrow pointing from "Debtors" back up to "Cash," indicating the return flow of capital to cash.

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Student
view

In this subtopic, you will learn how to calculate and improve each of the following efficiency ratios:

- **stock turnover ratio** (how quickly a business is able to sell its stocks)
- **debtor days** (how quickly a business is able to collect its debts)
- **creditor days** (how quickly a business pays its own debts)
- **gearing ratio** (the proportion of a business's capital that has been raised through potentially costly/risky long-term debt)

Can you see how each of these efficiency ratios relates to the working capital cycle? When that cycle breaks down, a business can become insolvent and may need to file for bankruptcy, a process that will also be examined in this subtopic.

🔑 **Concept**

Sustainability (economic)

Businesses/entrepreneurs are risk-takers that seek to make a profit and to continue their businesses. Sustaining business activity is especially important when businesses are providing for human needs, supporting the wellbeing of varied stakeholders in the community, and providing tax revenue to support public services.

Efficiency ratios, along with profitability and liquidity ratios, are important measures of economic or financial sustainability of a business. Given the many relationships that businesses have with varied stakeholders, businesses have a responsibility to monitor their financial performance and health in order to ensure that the business endures.

Learning objectives from the IBDP Business Management guide with assessment objective level:

- **Explain** and **calculate** efficiency ratios: stock turnover, debtor days, creditor days and gearing ratio (AO2, AO4)
- **Evaluate** possible strategies to improve efficiency ratios (AO3)
- **Distinguish** between insolvency and bankruptcy (AO2)

3. Finance and accounts / 3.6 Efficiency ratio analysis (HL)

Efficiency ratios

Efficiency ratios (HL)

Efficiency ratios measure how well a business is managing its operations in the working capital cycle. This section examines efficiency ratios related to stock turnover, debtor days, creditor days and gearing (which refers to debt levels).

Stock turnover ratio

The stock turnover ratio (also known as the inventory ratio) measures the number of times, on average, that a company sells and therefore replenishes its stock within a period of time, usually a year. In the case of a manufacturing enterprise, it can also refer to the rate at which a company uses its stock. Usually, the more frequently a stock is 'turned over' or sold, the more efficient the business; the business is able to turn stock into sales revenue quickly.

The stock turnover ratio is an average. This is because sales, and therefore stock turnover, often varies over the course of a year. This may be due to seasonal changes such as climate changes or holiday periods. The stock turnover ratio is calculated using either of the following formulas, depending on how the number is represented:

$$\textbf{Stock turnover ratio (number of times)} = \frac{\textbf{cost of sales}}{\textbf{average stock}}$$

or

$$\textbf{Stock turnover (number of days)} = \frac{\textbf{average stock}}{\textbf{cost of sales}} \times \textbf{365}$$

The cost of sales can be obtained from the statement of profit or loss (income statement or profit and loss account). Average stock is calculated as follows:

$$\textbf{Average stock} = \frac{\textbf{opening stock + closing stock}}{\textbf{2}}$$

For example, suppose that the cost of sales for the Riz and Javi supermarket is $300 million per year and that its opening stock is $60 million and closing stock $40 million. The stock turnover ratio is calculated as follows:

$$\text{Average stock} = \frac{\$60 \text{ million} + \$40 \text{ million}}{2} = \$50 \text{ million}$$

$$\text{Stock turnover ratio (number of times)} = \frac{\text{cost of sales}}{\text{average stock}}$$

$$= \frac{\$300 \text{ million}}{\$50 \text{ million}}$$

= 6 times per year

$$\text{Stock turnover (number of days)} = \frac{\text{average stock}}{\text{cost of sales}} \times 365$$

$$= \frac{\$50 \text{ million}}{\$300 \text{ million}} \times 365$$

= 60.83 days

This means that the Riz and Javi supermarket sold out of its stock six times per year, or every 60.83 days. This can be measured against other supermarkets to see how well it compares. By comparing with other businesses in the same industry, the business can evaluate its own efficiency. The business could also make comparisons with its own stock turnover ratio from previous years, to see whether it is becoming more or less efficient. A low inventory turnover ratio could indicate slow sales due to poor quality or range of goods, inadequate promotion, overstocking or other factors related to sales. A low inventory turnover ratio could also raise storage costs for the business.

It is important to note that businesses in different industries have different stock turnover ratios. For example, supermarkets have fast-moving stock and thus a higher stock turnover ratio. Businesses that sell carpets or cars have slow-moving stock, with a low stock turnover ratio. Therefore, generally, stock turnover ratios in different industries should not be compared.

Manufacturers also have slower stock turnover because it takes time to process raw materials. Businesses that provide services (such as banks, insurance or travel agents) do not have a lot of stock, and therefore this ratio is not a very useful measure for those businesses.

⊙ **Exam tip**

You will receive a formula sheet for the exam. All of the formulas in this subtopic are included on the formula sheet, so you do not need to memorise them. However, you do need to know which financial account provides the information and how to use the formulas to answer exam questions. You should also be able to interpret the results.

Debtor days

Some businesses are able to attract customers by selling goods on credit. This is especially true of businesses selling long-term consumer goods (such as cars, refrigerators and washing machines) and producer goods (such as machinery and delivery trucks). When selling goods on credit, the business must collect its money at a later time from these customers, or debtors as they are called. And it is important for businesses to collect their debts promptly. If it takes too long to collect the money from these debtors, the business could face cash flow problems (Subtopic 3.7 (/study/app/business-hl/sid-351-cid-762729/book/the-big-picture-id-39317/)) and a disruption to the working capital cycle.

The debtor days ratio measures the average number of days it takes the business to collect its debts. Typically, credit periods can be 30, 60 or 90 days. The shorter the period, the better for the business. The debtor days ratio is calculated using the following formula:

$$\textbf{Debtor days} = \frac{\textbf{debtors}}{\textbf{sales revenue}} \times \textbf{365}$$

The value for debtors is taken from the statement of financial position (balance sheet). The sales revenue is obtained from the statement of profit or loss.

The example of the Riz and Javi supermarket, which also sells some durable consumer products, can be used again. Suppose the supermarket has a debtor value of $34 million and a total sales revenue of $500 million. The supermarket's debtor days is calculated as:

$$\text{Debtor days} = \frac{\text{debtors}}{\text{sales revenue}} \times 365$$

$$= \frac{\$34 \text{ million}}{\$500 \text{ million}} \times 365$$

= 24.82 (25) days

This is probably a good debtor days figure for the supermarket. A credit period longer than 30 days would impact a supermarket's cash flow negatively, as it needs to restock regularly. Generally, businesses should avoid high debtor days figures. However, if the debtor days are too low, the business could lose customers who need a bit longer to pay for the products. So a good balance needs to be found.

Figure 1. Supermarkets aim for low debtor days to ensure sufficient cash flow for replenishing stock.

Credit: triloks, Getty Images

⚙ Activity

Learner profile: Knowledgeable
Approaches to learning: Thinking skills (transfer)

Sadia Limited sells 3000 units of output at a unit price of $120. The company has debtors valued at $40 000.

- Calculate Sadia Limited's debtor days ratio.

Sales revenue

= price × units sold
= $120 × 3000
= $360 000

Debtor days

$$= \frac{\text{debtors}}{\text{sales revenue}} \times 365$$

$$= \frac{\$40\,000}{\$360\,000} \times 365$$

=40.6 (41) days

Creditor days

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Figure 2. Businesses often buy resources from suppliers on credit.

Credit: Clerkenwell, Getty Images

The creditor days ratio is an indicator of the average number of days it takes a business to pay its debts. It is fairly common for businesses to buy resources on credit, with a payment period of 30, 60 or 90 days, depending on the amount and the trust between the business and the supplier.

The creditor days ratio is calculated using the formula below:

$$\textbf{Creditor days} = \frac{\textbf{creditors}}{\textbf{cost of sales}} \times \textbf{365}$$

The creditors figure comes from the statement of financial position (balance sheet). The cost of sales figure comes from the statement of profit or loss (income statement or profit and loss account).

The longer the creditor days, the better for the business. A longer payment period means that the business does not have to spend cash in the working capital cycle as quickly. It reduces the pressure of the working capital cycle for the business. A shorter period, however, may reduce the cash available for the business in its operations.

Assume the Riz and Javi Supermarket has a creditors value of $45 million and its cost of sales, as in the earlier example, is $300 million. Then its creditor days ratio can be calculated as follows:

$$\text{Creditor days} = \frac{\text{creditors}}{\text{cost of sales}} \times 365$$

$$= \frac{\$45 \text{ million}}{\$300 \text{ million}} \times 365$$

= 54.75 (55) days

This is probably an acceptable creditor days period for the supermarket. It is not uncommon for suppliers to give credit terms of 30 to 60 days.

If Riz and Javi supermarket's debtor days are 31 days, and its creditor days are 55 days, the business is likely in a good position to deal with the delays that come between the collection of money from their debtors and the payment of what they owe to their own creditors. Generally, businesses will try to arrange a shorter period for debtor days and a longer period for creditor days, as this makes it easier to manage the working capital cycle. However, in all cases, the business needs to maintain good relationships with those with which it trades. So a balance needs to be found between the business's own interests and the interests of its customers (debtors) and suppliers (creditors).

⊕ **International Mindedness**

You should be aware of terminology used in different countries. The term 'debtors', used in the UK, is referred to as 'accounts receivable' in the US. And the term 'creditors', used in the UK, is referred to as 'accounts payable' in the US.

Gearing ratio

The gearing ratio measures how much of the business's capital employed is financed by long-term debt, such as non-current liabilities. The higher the gearing ratio, the more of the business's operations are funded by long-term debt. This is risky and may not be positive for the business because, if interest rates increase, then loan payments could rise and undermine profits and dividends to shareholders.

A gearing ratio of 25% is generally considered low. A gearing ratio of 25% to 50% would be considered normal for many businesses, especially those that are well-established. A gearing ratio above 50% is considered high.

The gearing ratio is calculated as follows:

$$\textbf{Gearing ratio} = \frac{\textbf{non-current liabilities}}{\textbf{capital employed}} \times \textbf{100}$$

$$\textbf{Capital employed} = \textbf{non-current liabilities} + \textbf{equity}$$

Assume the Riz and Javi supermarket has non-current liabilities of $240 million and a capital employed of $625 million. Both values required in the formula can be obtained from the statement of financial position (balance sheet). The gearing ratio for the Riz and Javi supermarket is calculated as follows:

$$\text{Gearing ratio} = \frac{\$240 \text{ million}}{\$625 \text{ million}} \times 100$$

$$= 38.4\,\%$$

This means that 38.4% of the company's operations are financed by long-term loans. This is within a normal range. However, the business may also want to find out what the average gearing ratio is in their industry to see how their business compares with other similar businesses.

⊞ **Theory of Knowledge**

When businesses analyse their gearing ratio, they should be able to put their financial calculations in the context of their organisational culture and the market in which they are operating.

High gearing ratios might be acceptable for multinational companies selling to mass markets. They may not, however, be as acceptable for a smaller business that sells in a niche market. The context also includes considerations of the social, economic and political environment in which a business operates. Countries and cultures will differ in their tolerance of debt and risk. The stability of the economic and political environment also plays a role in how a business might interpret its debt levels.

- To what extent should culture and the time period be incorporated into the evaluation of efficiency ratios?

Table 1. Summary of efficiency ratio formulas.

Type	Formula
Stock turnover ratio	$\text{Stock turnover ratio (number of times)} = \frac{\text{cost of sales}}{\text{average stock}}$ or $\text{Stock turnover (number of days)} = \frac{\text{average stock}}{\text{cost of sales}} \times 365$
Debtor days	$\text{Debtor days} = \frac{\text{debtors}}{\text{sales revenue}} \times 365$
Creditor days	$\text{Creditor days} = \frac{\text{creditors}}{\text{cost of sales}} \times 365$
Gearing ratio	$\text{Gearing ratio} = \frac{\text{non-current liabilities}}{\text{capital employed}} \times 100$ $\text{Capital employed} = \text{non-current liabilities} + \text{equity}$

Case study

Apple is an American multinational technology company that specialises in consumer electronics, software and online services. However, is Apple financially efficient?

Figure 3. An Apple store.

Source: "Apple Store (https://commons.wikimedia.org/wiki/File:Applemorumbi.jpg)" by Diegogo08 is licensed under CC BY-SA 4.0 (https://creativecommons.org/licenses/by-sa/4.0/)

Look at the data in **Table 2** and answer the questions that follow:

Table 2. Apple's financial data in the quarter ending 25 December 202

Sources: Apple Newsroom ☑ (https://www.apple.com/newsroom/2022/01/apple-reports-first-quarte
(https://www.macrotrends.net/stocks/charts/AAPL/apple/inventory#:~:text=Apple%20inventory%20for%20the%20quar

Sales revenue	
Cost of sales	
Average stock	
Debtors	
Creditors	
Non-current liabilities	
Equity	

Questions

1. Calculate Apple's stock turnover ratio. [2 marks]
2. Calculate Apple's debtor days. [2 marks]
3. Calculate Apple's creditor days. [2 marks]
4. Calculate Apple's gearing ratio. [2 marks]

Question 1

$$\text{Stock turnover ratio (number of times)} = \frac{\text{cost of sales}}{\text{average stock}}$$

$$= \frac{\$69.7 \text{ billion}}{\$5.6 \text{ billion}}$$

= 12.46 times per year

or

$$\text{Stock turnover (number of days)} = \frac{\text{average stock}}{\text{cost of sales}} \times 365$$

$$= \frac{\$5.6 \text{ billion}}{\$69.7 \text{ billion}} \times 365$$

= 29.33 (30) days

Calculate is an AO4 level command term that requires numerical answers showing the relevant stages in the working.

- One mark is given for the correct answer.
- One mark is given for showing appropriate working.

Question 2

$$\text{Debtor days} = \frac{\text{debtors}}{\text{sales revenue}} \times 365$$

$$= \frac{\$30.2 \text{ billion}}{\$123.9 \text{ billion}} \times 365$$

= 88.97 (89) days

Calculate is an AO4 level command term that requires numerical answers showing the relevant stages in the working.

- One mark is given for the correct answer.
- One mark is given for showing appropriate working.

Question 3

$$\text{Creditor days} = \frac{\text{creditors}}{\text{cost of sales}} \times 365$$

$$= \frac{\$74.4 \text{ billion}}{\$69.7 \text{ billion}} \times 365$$

= 389 days

Calculate is an AO4 level command term that requires numerical answers showing the relevant stages in the working.

- One mark is given for the correct answer.
- One mark is given for showing appropriate working.

Question 4

$$\text{Capital employed} = \text{non-current liabilities} + \text{equity}$$

= $161.7 billion + $71.9 billion

= $233.6 billion

$$\text{Gearing ratio} = \frac{\text{non-current liabilities}}{\text{capital employed}} \times 100$$

$$= \frac{\$161.7 \text{ billion}}{\$233.6 \text{ billion}} \times 100$$

= 69.22%

Calculate is an AO4 level command term that requires numerical answers showing the relevant stages in the working.

- One mark is given for the correct answer.
- One mark is given for showing appropriate working.

3 <mark>section ques</mark>tions ∧

Question 1

The ‹1 stock turnover ✓ ratio measures the number of times, on average, that a company sells and therefore replenishes its stock within a period of time.

Accepted answers and explanation

#1 stock turnover

Inventory turnover

Question 2

What term indicates the average number of days that it takes a company to pay its debts?

✏ Creditor days   ✓

Accepted answers

Creditor days

Also accepted
creditor days ratio

Explanation
Creditor days is an indicator of the average number of days it takes a company to pay its debts. Businesses often buy goods and services on credit, with such payment periods as 30, 60 or 90 days, depending on the amount and the extent to which the supplier trusts that the business will settle on time.

Question 3

The gearing ratio is a measure of:

1   The extent to which a company's capital employed is financed by long-term debt   ✓

2   The amount of money in a company's off-shore accounts

3   The number of days it takes a company to recover its debt

4   The number of factories and trucks that a company owns

Explanation
Capital employed consists of long-term debt, retained profit and equity. The gearing ratio measures the proportion of capital or finance that is borrowed relative to owners' equity.

The number of trucks the company owns has no direct effect on the gearing ratio because trucks are fixed assets. This option is therefore incorrect.

The amount of money the company has in off-shore or foreign accounts is not an example of borrowing or a loan, but an asset to the company. This option is therefore incorrect.

The number of days it takes a company to recover its debt is measured by the debtor days ratio and has no bearing on the gearing ratio. This option is therefore incorrect.

3. Finance and accounts / 3.6 Efficiency ratio analysis (HL)

Strategies to improve efficiency

Strategies to improve efficiency (HL)

Businesses can use a combination of strategies to improve efficiency ratios.

Strategies to improve the stock turnover ratio

Different strategies used to improve stock turnover ratio, along with their benefits and limitations, are outlined in **Table 1.**

Table 1. Benefits and limitations of strategies used to improve the stock turnover ratio.

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Strategies	Benefits	Limitations
Supplying a narrower range of goods	Simplifies the stock, increases the control over stock and can reduce stock quantities.	Simplifying the product portfolio and offering reduced choice to customers may negatively affect sales revenues if fewer items are sold as a result.
Selling obsolete stock, stocking goods in high demand	Reducing unpopular stock items can reduce stocks. Selling goods in high demand will increase sales of stocks. This can also save on storage costs.	
Just-in-time stock control (Subtopic 5.6 (/study/app/business-hl/sid-351-cid-762729/book/the-big-picture-id-39337/))	Stock could be ordered only when needed for the production process. This ensures that there is no excess stock.	Delays in supply chains, as seen during the COVID-19 pandemic for example, can cause the business to run out of stock, reducing sales revenues and causing customer dissatisfaction. This increases risk.

🧳 Case study

Rahman Auto Repairs is an automobile spare parts business in Lucknow, India that was started by two sisters, Saba and Samina. The business supplies spare parts to major auto manufacturers in Lucknow. It has a huge inventory of spare parts. Some of the spare parts belong to old models of cars.

Figure 1. Rahman Auto Repairs supplies spare parts to major auto manufacturers in Lucknow.
Credit: Fertnig, Getty Images

The cost of sales is 120 000 INR. The business started the trading year with stocks valued at 100 000 INR. It had closing stock at the end of the trading year valued at 40 000 INR.

Questions

- Calculate Rahman Auto Repairs' stock turnover ratio. [2 marks]
- Explain one way in which Rahman Auto Repairs can improve its stock turnover. [2 marks]

Question 1

$$\text{Average stock} = \frac{\text{opening stock} + \text{closing stock}}{2}$$

$$= \frac{100\,000\ \text{INR} + 40\,000\ \text{INR}}{2}$$

$$= 70\,000\ \text{INR}$$

$$\text{Stock turnover ratio (number of times)} = \frac{\text{cost of sales}}{\text{average stock}}$$

$$= \frac{120\,000\text{ INR}}{70\,000\text{ INR}}$$

$$= 1.71 \text{ times per year}$$

or

$$\text{Stock turnover (number of days)} = \frac{\text{average stock}}{\text{cost of sales}} \times 365$$

$$= \frac{70\,000\text{ INR}}{120\,000\text{ INR}} \times 365$$

$$= 212.9 \ (213) \text{ days}$$

Calculate is an AO4 level command term that requires numerical answers showing the relevant stages in the working.

- One mark is given for the correct answer.
- One mark is given for showing appropriate working.

Question 2

To improve the stock turnover ratio, a business can reduce its average stock. By reducing the value of stocks, it will be easier to sell the stock more times per year. One way that Rahman Auto Repairs could reduce stock is by selling obsolete stock. The text says that the business only stocks parts for 'major auto manufacturers', but it should do an audit of its stocks to ensure that it is really stocking parts that are in demand. Any stock that is not popular or used often should be sold off and not reordered.

Other responses could include supplying a narrower range of goods or supplying only fast-moving items. (Both these are related to the idea of removing 'obsolete' items from the stock.) Another option is using just-in-time stock control.

Explain is an AO2 level command term, requiring a detailed account including reasons or causes. Explain *why*, explain *how*.

- Only **one** method needs to be explained. Other responses beyond those explained here are possible and would be rewarded if appropriate.
- To achieve full marks, you must always include theory and application to the case study in your responses.

Strategies to improve debtor days

Different strategies used to improve debtor days, along with their benefits and limitations, are outlined in **Table 2**.

Table 2. Benefits and limitations of strategies used to improve debtor days.

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Strategies	Benefits	Limitations
Having customers pay in cash	The business could offer discounts for cash payments, charge interest on credit payments or have a cash-only policy. This would reduce the amount of outstanding purchases on credit.	These strategies may upset some customers leading to a decline in sales revenue. A business needs to balance its own need to reduce debtors with its customers' needs for flexible payment options.
Shortening the credit period	Shortening the credit period from 90 days to 60 or 30 days would mean debtors paying sooner, decreasing the debtors' figure and lowering the debtor days.	
Improving credit control	The business could give trade credit only to customers with a record of paying on time. They could also use stricter criteria for buying on credit, reducing the number of customers who take this option.	
Refusing to do business with customers who pay late	Stopping deliveries to customers who have not yet paid for the product should also bring faster payment, reducing the debtor figures.	
Threatening legal action or imposing a penalty	The business could threaten legal action against customers who do not pay for delivered products. The business could also charge interest on overdue amounts.	

Strategies to improve creditor days

Different strategies used to improve creditor days, along with their benefits and limitations, are outlined in **Table 3**.

Table 3. Benefits and limitations of strategies used to improve creditor days.

Strategies	Benefits	Limitations
Negotiating longer credit periods	Businesses can develop close relationships with their suppliers (creditors), helping them negotiate longer credit periods.	Asking for longer credit periods can threaten relationships with suppliers, who themselves need payment for their own working capital cycles.
Good stock control system (just-in-time)	Stock could be ordered only when needed for the production process. This ensures that there is no excess stock.	Delays in supply chains, as seen during the COVID-19 pandemic, can cause the business to run out of stock, reducing sales revenues and causing customer dissatisfaction. This increases risk.
Looking for different suppliers	Working with different suppliers might help businesses get better credit terms and might extend credit periods.	Businesses will have to establish new relationships with suppliers. These new relationships may not have the trust needed to extend credit periods.

⚙ Activity

Learner profile: Knowledgeable
Approaches to learning: Thinking skills (transfer)

Dunkin' Express's cost of sales is valued at $240 000 in 2020. The restaurant has creditors valued at $25 000.

Questions

1. Calculate Dunkin' Express's creditor days ratio. [2 marks]

2. Explain how an increase in the value of Dunkin' Express's trade creditors is likely to affect its creditor days ratio. [2 marks]

Question 1

$$\text{Creditor days} = \frac{\text{creditors}}{\text{cost of sales}} \times 365$$

$$= \frac{\$25\,000}{\$240\,000} \times 365$$

$$= 38.02\ (39)\ \text{days}$$

Calculate is an AO4 level command term that requires numerical answers showing the relevant stages in the working.

- One mark is given for the correct answer.
- One mark is given for showing appropriate working.

Question 2

If the value of creditors increases for a business, this will increase the creditor days ratio. The current creditors figure is $25 000 on cost of sales of $240 000. If the creditors figure increases to $30 000 on the same cost of sales, then the creditor days figure will increase to 45.63 (46) days. This may have occurred because Dunkin' Express has negotiated a longer credit period with its suppliers (creditors). It could also be that Dunkin' Express has bought more of its supplies on credit than previously.

Explain is an AO2 level command term, requiring a detailed account including reasons or causes. Explain *why*, explain *how*.

- You must always include theory and application to the case study in your responses to access full marks. In this case, you could link to the text, by providing alternative data to show that the creditor days increases when the creditor figure increases.

Strategies to improve the gearing ratio

Different strategies used to improve creditor days, along with their benefits and limitations, are outlined in **Table 4**.

Table 4. Benefits and limitations of strategies used to improve the gearing ratio.

Strategies	Benefits	Limitations
Paying off liabilities	Businesses can pay their long-term liabilities to reduce the gearing ratio.	Paying off long-term liabilities will mean less cash for daily operations, which can reduce sales revenue.

	Strategies	Benefits	Limitations
Increasing retained profit		This can be achieved through cost minimisation and increasing revenue. This increases the value of the denominator in the formula, thereby decreasing the gearing ratio.	This strategy could mean reducing dividends to shareholders and may make them unhappy.
Selling more shares		This will increase the denominator and consequently decrease the gearing ratio. The value of equity will increase.	Selling more shares will dilute ownership of the company and reduce dividends to shareholders.

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⚙⚙ **Activity**

Learner profile: Knowledgeable
Approaches to learning: Thinking skills (transfer)

West End Supermarket has a few branches across Sri Lanka. It has an existing mortgage of $4.5 million. The business has equity valued at $2.5 million.

1. Calculate the gearing ratio for West End Supermarket. [2 marks]
2. Explain one strategy West End Supermarket can use to improve its gearing ratio. [2 marks]

Question 1

$$\text{Capital employed} = \text{non-current liabilities} + \text{equity}$$

$$= \$4.5 \text{ million} + \$2.5 \text{ million}$$

$$= \$7 \text{ million}$$

$$\text{Gearing ratio} = \frac{\text{non-current liabilities}}{\text{capital employed}} \times 100$$

$$= \frac{\$4.5 \text{ million}}{\$7 \text{ million}} \times 100$$

$$= 64.29 \%$$

Calculate is an AO4 level command term that requires numerical answers showing the relevant stages in the working.

- One mark is given for the correct answer.
- One mark is given for showing appropriate working.

Question 2

To improve the gearing ratio, a business can either reduce its non-current liabilities, which reduces the numerator in the formula, or it can increase the capital employed, which involves increasing equity. West End Supermarket can improve its gearing ratio by paying down its long-term liabilities, in this case its $4.5 million mortgage.

Explain is an AO2 level command term, requiring a detailed account including reasons or causes. Explain *why*, explain *how*.

- To achieve full marks, you must always include theory and application to the case study in your responses.

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Question 1

Which of the following is **not** a strategy to improve the gearing ratio?

1   Looking for different suppliers   ✓

2   Selling more shares

3   Increasing retained profits

4   Paying off liabilities

Explanation

Looking for different suppliers is one of the strategies to improve the creditor day ratio and not the gearing ratio, so is the correct answer. Working with different suppliers might help businesses get better credit terms and might extend credit periods.

The other three are strategies to improve the gearing ratio. A business could pay off its long-term liabilities to reduce the gearing ratio. It could also increase its retained profits which could be achieved through cost minimisation and increasing revenue. Selling more shares would increase the value of the denominator in the formula, thereby decreasing the gearing ratio; the value of equity would increase.

Question 2

Which of the following is **not** a strategy to improve debtor days?

1   Selling obsolete stock and stocking goods in high demand   ✓

2   Having customers pay in cash

3   Shortening the credit period

4   Improving credit control

Explanation

Selling unpopular or obsolete stock items will reduce stocks. Selling goods in high demand will increase sales of stocks. This can also save on storage costs. So this is a strategy to improve the stock turnover ratio, not debtor days, and is the correct answer.

The other three options are strategies to improve debtor days.

3. Finance and accounts / 3.6 Efficiency ratio analysis (HL)

Insolvency versus bankruptcy

Insolvency versus bankruptcy (HL)

Student view

The terms insolvency and bankruptcy are often confused. A business that is insolvent is not necessarily bankrupt. However, a business that is bankrupt is insolvent.

Insolvency

Insolvency is a situation where an individual or a business is not able to pay its debts. As you have learned earlier in this course, a lack of finance is the leading cause of business failure. In Subtopic 3.5 (/study/app/business-hl/sid-351-cid-762729/book/the-big-picture-id-39042/), you were also introduced to the working capital cycle, which outlines the flow of funds out of the business to purchase resources and the flow of cash back into the business as consumers purchase products. When this working capital cycle does not function effectively, a business can become insolvent.

Figure 1. Insolvency means that a business cannot pay its debts.

Credit: Isabel Pavia, Getty Images

Insolvency can occur under the following conditions:

- **Debtor days are too long**. Customers take a long time to pay for products, which reduces the cash flow into the business.
- **Loss of sales revenue**. This can occur due to internal factors, such as poor-quality products or high labour turnover, or external factors, such as increased competition or poor economic conditions.
- **Increased costs**. This can occur due to internal factors, such as inefficient production and waste, or external factors, such as increased competition for resources, inflation or rising interest rates.
- **Legal action**. If the business is sued, it may be forced to pay high legal fees or even settlements.

Section   Students   (0/0)   Feedback   Print   (/study/app/business-hl/sid-351-cid-762729/book/strategies-to-improve-efficiency-id-39313/print/)

Assign

Bankruptcy

When a business cannot pay its debts, it may need to file for bankruptcy. Bankruptcy is a legal process that may give an insolvent business a chance to restructure its operations and debt, so that it may become profitable again. In some common law countries – such as the UK and Australia – the term 'bankruptcy' is used only for individuals and businesses with unlimited liability, such as sole traders and partnerships. For businesses with limited liability in those countries, the term 'going into administration' is used for this legal process.

Sometimes a business, particularly a smaller business such as a sole trader or a partnership, will need to liquidate current and non-current assets immediately to pay creditors all or part of the debts owed. Larger limited liability companies who declare bankruptcy, or go into administration, may develop a plan to become solvent again. For a time,

the business will be protected from creditors. This plan will be monitored by an authority. If the plan does not work, then the business's assets may be liquidated to pay debts. Liquidation is usually the last resort for an insolvent business because of the significant impact that the business failure may have on a wide range of stakeholders.

Regardless of the outcome, bankruptcy will significantly damage the business reputation of those owners and managers involved. It is important, therefore, that businesses keep a close eye on their working capital to avoid insolvency in the first place. This can be done through careful and ethical accounting practices and avoiding large debts and risks.

Figure 2. Small businesses in bankruptcy may need to close and liquidate their assets to pay creditors.

Credit: Nathan Bilow, Getty Images

⚙ Activity

Learner profile: Inquirer
Approaches to learning: Research (information literacy)

Bankruptcies during the COVID-19 pandemic

Small- and medium-sized enterprises (SMEs) are defined as companies that have less than 250 employees. According to the IMF, 99.8% of all companies are SMEs. SMEs employ 65% of private sector workers and account for more than half of all private sector output. SMEs were particularly vulnerable to the external shock of the COVID-19 pandemic. In other circumstances, SMEs could manage short-term funding needs with short-term loans. But the length of disruption during the pandemic meant that many businesses could not survive their revenue declines. As a result, the rate of bankruptcy, where companies legally declare that they cannot repay debts, increased during the pandemic.

The data in **Table 1** comes from an early IMF working paper in September 2020, where researchers estimated yearly bankruptcy rates (without government support) that would be caused by the COVID-19 pandemic in different sectors. The estimates were made for some countries in the Organisation for Economic Cooperation and Development (OECD), a group of high-income countries.

Table 1. Estimated bankruptcy rates by sector caused by the COVID-19 pandemic (2020).Source: IMF Working Paper WP/20/207 ☑ (https://www.imf.org/-/media/Files/Publications/WP/2020/English/wpiea2020207-print-pdf.ashx)

	Non-COVID bankruptcy rates (%)	COVID-19 bankruptcy rates (%)	Change
Agriculture	9.44	13.52	4.08
Mining	12.50	36.03	23.54
Manufacturing	8.48	16.73	8.25
Electric, gas and air con	9.35	11.31	1.96

Overview
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	Non-COVID bankruptcy rates (%)	COVID-19 bankruptcy rates (%)	Change
Water and waste	6.72	9.65	2.93
Construction	7.97	10.19	2.21
Wholesale and retail	9.12	18.21	9.10
Transport and storage	7.64	13.28	5.63
Accommodation and food service	13.15	38.59	25.44
Info and comms	10.00	15.92	5.92
Real estate	11.61	17.38	5.76
Prof, Sci and Technical	10.24	18.85	8.60
Administration	8.32	19.39	11.06
Education	10.86	30.04	19.18
Health and social work	7.74	11.22	3.48
Arts, entertainment and recreation	12.95	36.55	23.60
Other services	12.80	31.42	18.62

Questions

1. State the percentage of bankruptcies estimated in normal conditions in the Education and Health and Social Work sectors. [2 marks]

2. Outline how the percentage of bankruptcies in the Manufacturing sector was estimated to change from normal to COVID-19 conditions. [2 marks]

3. Identify which sector was estimated to have the largest change in bankruptcies due to the COVID-19 pandemic and explain why. [4 marks]

Question 1

Under normal conditions, the bankruptcy rate in the Education sector is estimated to be 10.86%. Under normal conditions, the bankruptcy rate in the Health and Social Work sector is estimated to be 7.74%.

State is an AO1 level command term, requiring a specific name, value or other brief answer without explanation or calculation.

- One mark is given for each correct response.

Question 2

The percentage of bankruptcies in the Manufacturing sector increased by 8.25 percentage points, from 8.48% to 16.73%.

Outline is an AO1 level command term, requiring a brief account or summary.

- To achieve full marks, the response should refer to a change in percentage points, rather than percentage.

Question 3

The sector with the largest estimated change in bankruptcies is the Accommodation and Food Services sector, with an increase of 25.44 percentage points, from 13.15% to 38.59%.

The reason for this large increase in estimated bankruptcies is that hotels and restaurants had to close for long periods of time due to government mandated lockdowns. As the text points out 'the length of disruption during the pandemic meant that many businesses could not survive their revenue declines'. This was particularly true in these two sectors, which were closed for longer and were less resilient, with few other options for earning revenue under the conditions.

Explain is an AO2 level command term, requiring a detailed account including reasons or causes. Explain _why_, explain _how_.

- Two marks are given for identifying the correct industry, and for supporting the choice with data from the table.
- Two marks are given for explaining the reason for the large, estimated increases in bankruptcies, using evidence from the text to support the idea.

2 section questions ^

Question 1

What is the term that refers to a situation where a business cannot pay its debts?

✎   Insolvency   ✓

Accepted answers
Insolvency

Explanation
When a business is insolvent, it cannot pay its debts. Insolvency is different from bankruptcy, which is a process whereby either a business's assets are liquidated to pay debts, or a plan is created to restructure the business and/or debt to get the business solvent again.

Question 2

Which of the following is **not** a typical reason for a business to become insolvent?

1   The business's current assets exceed its current liabilities.   ✓

2   The business's debtor days are too long.

3   The business loses sales revenue due to poor internal or external conditions.

4   The business faces rising costs due to internal inefficiencies or external economic conditions.

Explanation
Insolvency occurs when a business cannot pay its debts. If the current assets of a business exceed current liabilities, then the business is likely not insolvent. So this is **not** a reason for insolvency.

The other three reasons presented (debtor days being too long, loss of sales revenue and higher costs) are all typical reasons why a business may not be able to pay debts, and would therefore become insolvent.

3. Finance and accounts / 3.6 Efficiency ratio analysis (HL)

Terminology exercise

Section   Student…   (0/0)   📢 Feedback   🖨 Print (/study/app/business-hl/sid-351-cid-762729/book/terminology-exercise-id-39315/print/)   Assign   ▼

Check that you understand the terminology used in this subtopic by dragging the correct word into each space.

Different   ratios show how well the business is managing its operations related to the working capital cycle.

The   ratio measures the number of times, on average, that a company sells and therefore replenishes its stock. The   measures the efficiency with which the company collects its debts. The   measures the average number of days it takes the company to settle its debts. Finally, the   measures how much of the company's capital employed is financed by long-term debt.

The term   refers to a situation whereby a business cannot pay its debts. The term   refers to a situation whereby an insolvent business has to follow a legal process to settle its debts. This could mean liquidation of current and non-current assets, or it could mean developing a plan to become solvent again under supervision of an authority.

(efficiency) (stock turnover) (debtor days) (gearing ratio) (bankruptcy) (creditor days) (insolvency)

☑ Check

Interactive 1. Terminology Exercise: Efficiency Ratio Analysis.

3. Finance and accounts / 3.6 Efficiency ratio analysis (HL)

Checklist

| Section | Student... | (0/0) | 📢 Feedback | 🖨 Print | (/study/app/business-hl/sid-351-cid-762729/book/checklist-id- | Assign ▾ |

🗒 **What you should know**

By the end of this subtopic, you should be able to:

- define the following terms: (AO1)
  - efficiency ratio
  - stock turnover ratio
  - debtor days
  - creditor days
  - gearing ratio
  - insolvency
  - bankruptcy
- explain and calculate efficiency ratios: stock turnover, debtor days, creditor days and gearing ratio (AO2, AO4)
- evaluate possible strategies to improve efficiency ratios (AO3)

- distinguish between insolvency and bankruptcy (AO2)

3. Finance and accounts / 3.6 Efficiency ratio analysis (HL)

Reflection

Section	Student... (0/0)	📢 Feedback	🖨 Print (/study/app/business-hl/sid-351-cid-762729/book/reflection-id-48324/print/)	Assign ▾

⇤⊓ Teacher instructions

The goal of this section is to encourage students to pause at the end of the subtopic and to reflect on their learning. Students can use the questions provided below to guide their reflection. The questions encourage students to look at the bigger picture and to consider how the subtopic's contents might have impacted the way they view the subject.

The following table shows you how each prompt aligns to the DP *Business management guide*:

Prompt #	Syllabus alignment
1	**Learner profile:** Thinkers
2	**Learner profile:** Balanced
3	**Concept:** Change

Students can submit their reflections to you by clicking on 'Submit'. You will then see their answers in the 'Insights' part of the Kognity platform.

✏ Reflection

In this subtopic you continued to learn about ratio analysis.

Take a moment to reflect on your learning so far. You can use the following questions to guide your reflection. If you click 'Submit', your answers will be shared with your teacher.

1. How would stock turnover ratios differ between a real estate company and a cosmetic company?
2. Have you ever been to a restaurant where the waiter hurried you to leave the table? What about a doctor appointment? How did that make you feel? Do you think that high turnover is good or bad for a service-oriented business?
3. Businesses operate in different contexts. To what extent is it necessary to understand the context of the business to evaluate its debtor days and creditor days ratios? How do we expect these ratios to change over time?

⚠ Once you submit your response, you won't be able to edit it.

0/2000

Submit

Rate subtopic 3.6 Efficiency ratio analysis (HL)

Help us improve the content and user experience.

☆ ☆ ☆ ☆ ☆