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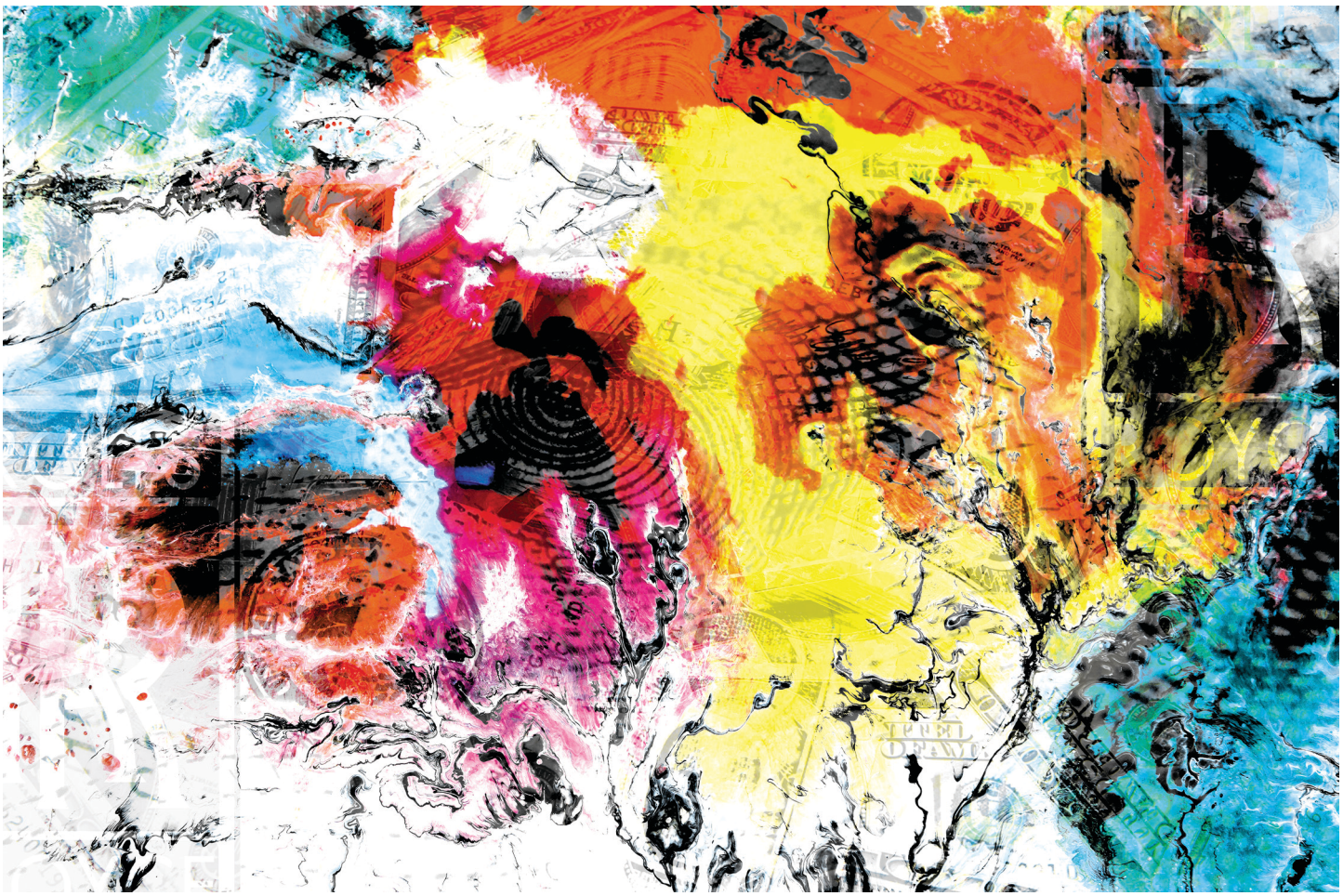
B250_1

Financial statement analysis and interpretation



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Contents

Introduction

Regulatory bodies require companies to prepare **financial statements**, as they assist a wide range of users in financial decision-making. In this course, you will learn how the users of financial statements draw inferences about the financial position and performance of the reporting entity. To understand the information presented in financial statements, users need to carry out different types of analysis.

You will be introduced to a variety of techniques that can be used to analyse financial statements. The type and nature of that analysis will depend on the information needs of each user. You will learn about ratio analysis, vertical analysis, horizontal analysis, segmental analysis and the analysis of historical data as key tools in the analysis of financial statements. You will learn how to carry out financial analysis using profitability, liquidity, solvency, and efficiency ratios whilst evaluating a company's performance.

You will look at the annual reports of various companies and analyse aspects of their financial statements.

This OpenLearn course is an adapted extract from the Open University course BXI250 *Intermediate financial accounting*.

Learning outcomes

After studying this course, you should be able to:

- explain why is it important to analyse and interpret financial statements
- explain how different stakeholder groups might be interested in different ratios
- carry out financial statement analysis using a number of key techniques
- interpret different financial ratios.

1 The need for interpretation of financial statements

Figure 1 Interpreting financial statements

Financial statements are used by a variety of users (such as investors, lenders and managers) to assist them in financial decision-making. The financial decisions of these users may be influenced by a variety of factors such as return on investment, efficiency in utilisation of resources, financial leverage, dividend pay-outs, etc. However, this information needs to be extracted and analysed to make an evaluation of a company's earnings, its financial performance in comparison to its competitors and its ability to pay back its loans.

An evaluation of changes in the value of one item in relation to another item can help draw useful inferences about past performance as well as the estimated future performance of the company. Analysis of financial statements enables such an evaluation. Various techniques can be applied to interpret a company's financial statements; however, it is important to be aware that these techniques, on their own, provide a limited view of corporate performance and position and should be used in conjunction with a critical evaluation of other factors, such as the accounting policies used, factors relating to corporate governance and the environment in which the company operates.

Figure 2 Various factors influence investor decision-making

Activity 1 will encourage you to think about the factors that influence an investor's choice of investment options.

Activity 1 Usefulness of financial statement analysis

Allow 15 minutes

Read the scenario and answer the question.

Scenario
An investor will have many options when making an investment. They may decide to invest in various asset classes such as commodities, property, shares, cryptocurrency, etc. These choices are affected by the risk profile of each asset class, the risk appetite of the investor and the capacity of the investor to absorb risks. Imagine you have £75,000 and you want to invest this money in a company's shares.

a. Which factors will influence your decision?

Provide your answer...

Feedback

Various factors influence an investor's decision when making an investment. This decision is based on the risk appetite of the investor and their capacity to absorb risk. You may make an initial analysis of the environment in which the company is operating and preparing financial statements. The analysis of context entails an assessment of the key risks and opportunities and provides an indication of future

business prospects. It will be followed by an assessment of the performance and position of major competitors. Finally, the investor will make an investment in an asset that matches their risk profile and generates the highest return compared to other similar investment options.

b. How will you decide which company to invest this money in?

Provide your answer...

Feedback

You may find yourself asking such questions as: Why should I invest in one company and not another? Which company matches my risk profile and expectations regarding return?

To answer these questions, you will need to carry out an analysis of the financial statements. If you decide to invest in a company's shares, you will have to assess the risk profile as well as the rate of return you may expect from investing in that company. Analysing the financial statements will provide you with an indication of the expected future performance and financial position of the company, and help you to compare its performance and financial position with other companies. Then you will be in a position to invest in the company which offers the best return for a given risk profile.

1.1 Extracting meaningful information

One limitation of financial statements is that they only show absolute figures relating to a particular accounting period of normally two years (the latest annual figures as well as the previous ones). It is much more informative for users of accounts to have comparative information that gives much more context to the figures in the financial statements. Such information may be how financial results compare between companies in the same industry or how a company's results compare with expected figures.

Analysts (in this course, anyone engaged in the analysis of financial statements is referred to as an analyst) will usually use the following steps when analysing financial statements:

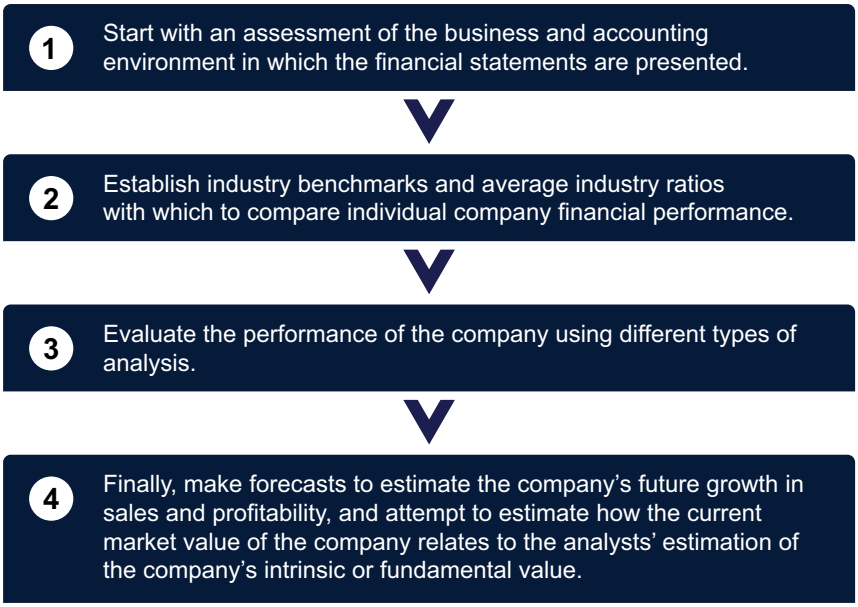

Figure 3 An analyst follows various steps to analyse financial information before making an investment decision

If the analyst thinks that the market value of the company is higher than its intrinsic value, it may be time to sell the shares. On the other hand, if the analyst thinks that the intrinsic value is higher than the market value, it means their expectation is the share price will probably rise, so there is a possibility of making a profit by buying the shares now and selling them later.

In practical terms, ratios provide highly useful information to analysts for making important financial decisions. However, do note that any analysis produced just by looking at the ratios of an organisation in one year will not necessarily provide a good insight into its financial and operational health.

2 Types of financial statement analyses

There are three main techniques that help users build an opinion about the financial strength and performance of a business: ratio analysis, vertical analysis (also known as common size analysis) and horizontal analysis.

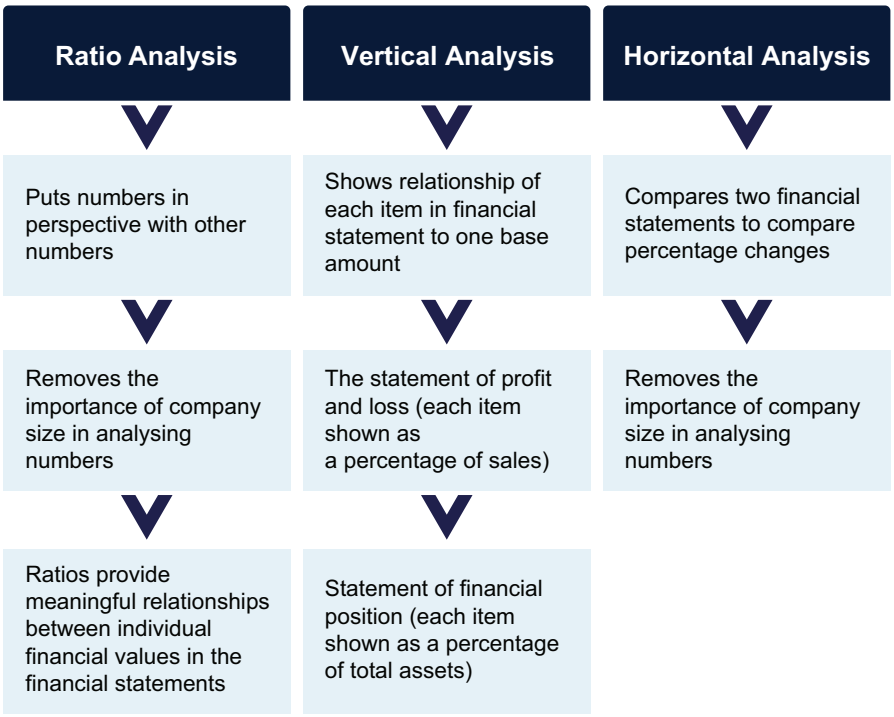

Figure 4 There are three different types of financial statement analyses

There are other types of analyses as well, such as segmental analysis and historical summaries, which may help users to gain a holistic understanding of a business.

2.1 The case of a fictitious company

The case of an imaginary company, Remote Sensors Plc, will be used for the purposes of the worked examples throughout this course. It is important that you familiarise yourself with these financial statements so that you understand the workings in conducting various types of financial analysis.

Example: The case of Remote Sensors Plc

Remote Sensors Plc is a small single entity company that manufactures electrical equipment for commercial and household use. The company was established in 2021 and has just one warehouse. The management is gradually expanding the company's business.

Assume that you are a trainee in an accounting firm that has been approached by a client who is interested in making a substantial investment in the company's shares. You are required to prepare a report on Remote Sensors Plc's financial position and financial performance.

The following data have been extracted from the statements of financial position and the statement of profit or loss of Remote Sensors Plc.

Remote Sensors Plc: Statements of financial position at 31 December 2025, 2024 and 2023

	2025	2024	2023
	£	£	£
Assets			
Land and buildings	26,310	20,130	19,880
Computers and equipment	2,460	2,340	2,820
Vehicles	10,381	9,490	9,580
Total non-current assets	39,151	31,960	32,280
Current assets			
Inventory	2,056	2,501	1,860
Receivables	1,982	1,750	2,280
Other current assets	1,280	2,175	1,670
Cash and cash equivalents	7,980	9,270	6,350
Total current assets	13,298	15,696	12,160
Total assets	52,449	47,656	44,440
Equity			
Equity share capital (nominal value £1 each)	16,000	16,000	16,000
Reserves			
Retained earnings	25,980	24,155	21,790
Total equity	41,980	40,155	37,790
Non-current liabilities			
Interest-bearing loans and borrowings	5,600	2,990	2,580
Current liabilities			
Trade payables	3,200	2,166	1,610
Interest-bearing loans and borrowings	1,000	1,745	1,900
Corporation tax payable	669	600	560

	2025	2024	2023
	£	£	£
Total current liabilities	4,869	4,511	4,070
Total liabilities	10,469	7,501	6,650
Total equity and liabilities	52,449	47,656	44,440

Remote Sensors Plc: Income statements for the years ended 31 December 2025, 2024 and 2023

	2025	2024	2023
	£	£	£
Sales revenue	17,860	16,995	15,990
Cost of sales	(10,590)	(10,660)	(9,876)
Gross profit	7,270	6,335	6,114
Administrative expenses	(3,150)	(2,820)	(2,630)
Profit before interest and tax	4,120	3,515	3,484
Net interest payable	(890)	(390)	(359)
Profit before taxation	3,230	3,125	3,125
Taxation	(290)	(250)	(210)
Profit attributable to shareholders	2,940	2,875	2,915

3 Information needs of different stakeholder groups

An analysis of financial statements should enable users to draw inferences about key areas of their interest. Financial ratios are an important tool to enable financial statement analysis. However, different stakeholders might be interested in understanding and analysing financial statements from different perspectives. Since there is a variation in the information needs of different stakeholder groups, ratios should be calculated whilst taking the information needs of these different stakeholder groups into account. Before reading more about ratio analysis, it might be beneficial to learn about the differences in the information needs of **external stakeholders** and **internal stakeholders**.

3.1 Who needs ratios? The external stakeholders' perspective

Ratios are a powerful tool for an organisation's external stakeholders (be they suppliers, lenders, prospective investors or competitors). It is not always easy to access all the information you need about an organisation in order to analyse it. Organisations do not disseminate certain internal information, partly to protect any strategic advantage they may have over their competitors. Disseminating too much information can be advantageous to competitors, who will then have a clearer idea of the strengths and weaknesses of rival organisations. As a consequence, all organisations, private and not-for-profit, tend only to disclose information that legislation, regulation and accounting standards require. Ratio analysis, however, enables scrutiny of financial statements in order to better understand the health and performance of organisations.

Figure 5 provides an explanation of the information and analysis needs of suppliers, lenders, prospective investors and competitors as important external stakeholders. Click on each heading to find out more about each one.

Interactive content is not available in this format.

Figure 5 Financial information needs of external stakeholders

3.2 Who needs ratios? The manager's perspective

Figure 6 Comparisons are vital in analysis of financial statements

Ratio analysis can also provide managers with a wealth of information and is primarily the reason why the technique is introduced here. A manager might not be expected to become as proficient in ratio analysis as, say, a banking loan analyst, but an ability to use its basic tools will benefit managers in their day-to-day work. For example, it is likely that a manager will at some time need to provide financial data to a bank, perhaps as part of a proposal for project funding. A basic understanding of how the bank will use the information will enable the manager to present their organisation's case in the best way. However, while the bank example is valid and important, ratio analysis offers far wider benefits to managers. Whatever the manager's role, it is very likely that they will need, from time to time, an understanding of the financial position of a competitor or a commercial partner. The latter could be a customer (can they pay when required?) or a supplier (can they be relied upon?). In all such cases, a short time spent analysing the organisation's published information will provide a surprising degree of insight into a potential partner. The information collected will not only provide data about the organisation's current financial health and how likely it is to survive in the short, medium or long term but also indicates how capable the operational management is in running the business. This will always be helpful in a general way, will usually provide a beneficial negotiating position and will sometimes warn against a very unfavourable relationship with an organisation.

Comparisons

To analyse an organisation's performance properly using ratios, you need to run comparisons.

Figure 7 shows the three different levels at which comparisons can be performed. Click on each heading to read more about each one.

Interactive content is not available in this format.

Figure 7 A company's financial data can be compared at three different levels

Any findings should always be investigated and interpreted. Differences with respect to sector average values or historical changes for any ratio may, given the prevailing circumstances, indicate a positive development, a negative development or a change of no significance. Furthermore, each ratio needs to be considered both as an indicator for one piece of the analysis of an organisation and as an element in the overall picture given by the full set of ratios.

4 What is ratio analysis?

Ratio analysis is an evaluation of the relationship between various figures within a set of financial statements. This can be done by calculating ratios using two or more figures from the financial statements.

For example, gross profit margin expresses the relationship between gross profit and sales revenue of a company.

If a company's gross profit was £50,000 and the value of the total revenue earned was £100,000, its gross profit margin will be calculated as follows:

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

$$= \frac{50{,}000}{100{,}000} \times 100$$

$$= 50\%$$

This means that for every £1 of sales, the company earns £0.5, which is then used to cover company's other operating and financing costs.

The figures for ratio analysis should be chosen in such a manner that they generate a meaningful analysis.

Ratio analysis is carried out on the basis of the assumption that:

- accounts under review are prepared using the same accounting policies
- the company was involved in the same economic activity during the period of analysis.

Ratio analysis can be used in several different ways to provide useful insights. For example, the ratios for one accounting period can be compared with:

- the ratios from preceding period(s)
- the ratios of other segments within the company
- the ratios of competitors or other companies within the same industry
- industry benchmarks.

Comparison: The key to ratio analysis

If a company in India, Sugith Telecom, earns a revenue of INR 2,000m in 2023 whilst the total market for that product is INR 30,000m, then the ratio of sales to the total home market (that is, the company's market share) is 2,000:30,000 (or 1:15 or 6.67%). (Note: INR is the currency code for the Indian Rupee.) If in 2024, the total market for the product expands to INR 35,000m, and the company's revenue also increases to INR 2,360m, then the ratio of sales to the total home market will become 2,360:35,000 or 6.74%. This comparison reveals that the company has succeeded in capturing a larger market share and customers in that product market increasingly prefer the company's products over those of its competitors. Let us further assume that the biggest market player in the telecom sector has a ratio of sales to the total home market of 6.83%. This comparison may indicate that Sugith Telecom is performing fairly well by being a very close competitor to the biggest market player.

Caution

It is important to be conscious of the differences in international accounting policies and standards when comparing the financial ratios of companies from different regions.

Furthermore, you should bear in mind that a ratio does not provide information about any trends of its individual components. It only measures the relationship between variables. For example, the ratio of sales to the total home market calculated in the above example 'Comparison: The key to ratio analysis' does not give any information about the extent of change in revenue alone.

4.1 Benefits of ratio analysis

Ratio analysis provides several benefits to analysts as explained in figure 8.

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Figure 8 Comparing performance

Although ratio analysis is a useful tool for financial analysis, it can be of benefit only if it is used effectively. There are a number of factors that must be considered when performing ratio analysis. Video 1 explains these factors in detail.

Please note: this video references Units 5 and 6, as it is an excerpt from an OU qualification.

Video content is not available in this format.

Video 1 A few points to consider

5 Categories of ratios

Ratios can be classified into the following broad categories:

1. Profitability ratios
2. Liquidity ratios
3. Solvency ratios
4. Efficiency ratios
5. Investor ratios.

Now you will learn to calculate different ratios falling within each of the above categories using the financial statements of Remote Sensors Plc. It is important to note that definitions of different ratios vary. Although one definition of a ratio might be considered as valid as another, it is important to be consistent in calculating the ratios and for practice and assessment purposes it is recommended that you use the formulas provided in this session. Owing to the differences in definitions and calculations, you are also advised to be mindful of the differences in the ratios computed elsewhere (such as Fame or other financial databases).

5.1 Profitability ratios

Profitability ratios aim to evaluate whether the profitability of the business organisation is sufficient to justify the amount of funds invested in the business, compensates the investors for the risk they are taking by investing their money and contributes in evaluating if a better return could be earned by investing funds in other investment options of a similar risk profile. These ratios also help managers to monitor the company's performance and help employees know if the company can continue to pay them.

5.1.1 Sales growth

The starting point in assessing profitability is to consider the rate of growth or decline in sales. Sales growth indicates a company's ability to increase revenue over a given period of time. Sales growth is calculated as follows:

$$\text{Sales growth } = \frac{\text{Revenue in year 2} - \text{Revenue in year 1}}{\text{Revenue in year 1}} \times 100$$

Sales growth is particularly useful for investors who want to assess changes in the demand for the products and services of a company in the future. The rates of sales growth vary across industries and company sizes. Small and medium companies experience a higher sales growth rate compared to large companies. Very large companies usually achieve sales growth rate of 5–10%. However, medium and small companies may achieve sales growth of 10% or more. For example, in 2023 sales growth rate for EssilorLuxottica (a global luxury eyewear conglomerate) was recorded at 7.1%, while sales growth rate for Warby Parker (a small company producing affordable eyewear) was 11.96%.

As the sales figure will reflect recent market prices and volumes sold, it is useful to see if the change is due to price or volume. When interpreting the rate of growth in sales you

should bear in mind that the total sales figure may include revenue from businesses acquired or sold, from or up to the date of the acquisition or disposal. This will depend on the accounting standards which the organisation follows. For instance, under International Financial Reporting Standards (IFRS) 5, sales from discontinued operations are not reported as part of the operating turnover figure. If your objective is to estimate possible future rates of growth, it is important to adjust for the sales gained or lost through acquisitions or disposals in order to identify the underlying trends in the existing business. This is useful because it would help to explain unexpected changes in sales data.

Interpreting the trend in sales can also pose a particular problem for organisations trading in many countries. For such organisations, sales figures are normally converted at the exchange rates achieved during the period in question. The sales figure will therefore incorporate not only price and volume changes but also exchange rate movements. For instance, if the US dollar is weak, it can cause major problems even for non-US companies whose revenues are mainly US-dollar denominated, such as oil companies and some airlines, when sales are converted back to sterling or euros.

The figures below represent revenue from the income statement of Remote Sensors Plc for five consecutive years and show the calculations for sales growth over these years.

	2025	2024	2023	2022	2021
	£	£	£	£	£
Sales revenue	17,860	16,995	15,990	11,560	8,238
Sales growth	5.09%	6.29%	38.32%	40.33%	-

To elaborate, sales growth from 2021 to 2022 (40.33%) is calculated as (11,560 − 8,238)/8,238 expressed as a percentage. You may observe that sales growth for Remote Sensors Plc was also good at 38.32% from 2022 to 2023. However, there was a sharp decline in growth in 2024, and it deteriorated even further in 2025. It is important to investigate the reasons for this decline. Does the company need to revisit its pricing policy? Or does the company need to pay more attention to increasing its sales volume through appropriate marketing and advertising? Are there any new competitors in the market? Are there any new social or technological advancements that are negatively influencing the company's ability to sell its products? Or, since the company was formed in 2021, has it already captured most of its market share and a further growth in sales is becoming increasingly challenging?

Activity 2 provides you with an opportunity to practise calculating sales growth and to understand the significance of changes in sales revenue over time.

Activity 2 Calculating sales growth

Allow 10 minutes

Read Marks & Spencer Group Plc's sales and gross profit data (obtained from Fame) and answer the questions below.

a. Calculate the sales growth for M&S for each year. The data from 2018 to 2022 are as follows:

	2022	2021	2020	
	£m	£m	£m	
Total revenue	10,885.10	9,155.70	10,181.90	10,3
Sales growth	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your answe*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Total revenue	10,885.10	9,155.70	10,181.90	10,377.30	10,698.20
Sales growth	18.89%	−10.08%	−1.88%	−2.99%	-

b. Comment on the changes in the ratio over the years under consideration. Consider various factors that might explain changes in sales growth over the years (such as the Covid-19 pandemic).

Provide your answer...

Feedback

It might be observed that there was a decline in sales growth in 2019 which continued in the years to 2021. This indicates a shrinking market for the products and services of M&S and should be a matter of concern for management. There could be various possible explanations for this decline in sales growth such as changes in preferences of customers or the Covid-19 pandemic. The reasons for this decline in growth will need to be investigated by the management. Similarly, an increase of 18.89% in 2022 might indicate the opening of normal business after the pandemic and more data will be needed to assess the company's ability to increase its sales.

5.1.2 Gross profit margin

The gross profit of a company is calculated by subtracting cost of sales from sales revenue. The gross profit margin indicates what percentage of sales revenue is left to pay operating expenses, finance costs and corporate tax after deduction of the direct costs associated with the production of goods or services.

Gross profit margin is calculated as follows:

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Sales revenue}} \times 100$$

Gross profit margin provides insights into the ability of management to earn profits from the company's core operations. It shows how effective the management is in controlling the costs of production or other expenses directly linked to the production of goods and services. It also gives an indication of a company's ability to set competitive prices for its goods and services. The companies having a higher gross profit margin have higher pricing power and can earn higher profit per unit of sales. A stable gross profit margin over the years suggests that the company is in good control of its costs and profitability. Such companies are considered more reliable and capable of dealing with adverse market conditions or fluctuations.

Gross profit margin may change owing to a number of factors. Changes in pricing of products and services will directly impact gross profit margin. If the company increases the prices for its products or services while the costs of production and sales volume remain constant, the gross profit margin will increase. Conversely, if owing to competitive pressures, the company decreases prices, gross profit margin will decrease. Changes in the costs of production will also directly influence gross profit margin. If the company negotiates better prices with suppliers and designs cost-effective production processes, it will result in an improved gross profit margin. Bad purchasing policies may result in inventories being sold at reduced profits (or even losses) and adversely affect gross profit margin. Inventory losses owing to theft or obsolescence also decrease gross profit margin. Changes in sales volume and mix of sales will also have a direct impact on gross profit margin. For example, sales of low margin products will result in decreased gross profit margin. Sales of goods on a large scale results in economies of scale and reduces costs of production, which positively influences gross profit margin.

Gross profit margin will vary across different business organisations depending on the nature of business. For example, the calculation of gross profit margins for manufacturing concerns is significant owing to the high level of direct costs associated with the production of goods (such as the cost of labour, raw materials and other production related expenses). On the other hand, the calculation of gross profit margins for financial and banking institutions is not as relevant and might not even be reported because they are not involved in direct production functions and instead focus on calculations of operating costs and operating profits. Similarly, gross profit margins of various products might be different for a single business as well. For example, the gross profit margin for Tesco Bank will be less significant and relevant compared to the gross profit margin for Tesco Groceries.

The gross profit margin for Remote Sensors Plc is calculated as follows:

	2025	2024	2023
	£	£	£
Sales	17,860	16,995	15,990
Gross profit	7,270	6,335	6,114
Gross profit margin	40.71%	37.28%	38.24%

The gross profit margin for 2025 indicates that 40.71% of sales revenue is available after payment of cost of sales and can be used to finance operating costs, interest and corporation tax.

It can be observed that in 2025, Remote Sensors Plc's gross profit margin increased, which is a positive sign. However, there was a slight decrease in gross profit margin from 2023 (38.24%) to 2024 (37.28%). Even a small decrease in gross margin is not a good sign because it can have a significant negative impact on a company's net income and internal management would almost certainly call for further investigation. Since Remote Sensors Plc is a manufacturer of electrical equipment, a reduction in gross profit margin might be caused by several factors such as:

- a change in the sales mix resulting in low-margin products being sold
- discounts offered to increase sales volume whilst compromising profitability
- an increase in the prices of materials whilst this increase has not been passed on to customers through an increase in sales price
- poor purchasing policies resulting in inventories being sold at a loss
- inventory losses caused by theft or value reduction.

Activity 3 provides you with an opportunity to practise calculating the gross profit margin and to understand the significance of changes in gross profit margin over time.

Activity 3 Calculating gross profit margin

Allow 15 minutes

Read the data on Marks & Spencer Group Plc's sales and gross profit from 2018 to 2022 below (obtained from Fame) and answer the following questions.

a. Calculate the gross profit margins for the years 2018 to 2022.

	2022	2021	2020	
	£m	£m	£m	
Total revenue	10,885.10	9,155.70	10,181.90	10,37
Cost of sales	(7,130.30)	(6,244.10)	(6,589.50)	(6,54
Gross profit	3,754.80	2,911.60	3,592.40	3,83
GP margin	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your answe*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Revenue	10,885.10	9,155.70	10,181.90	10,377.30	10,698.20
Cost of sales	(7,130.30)	(6,244.10)	(6,589.50)	(6,547.20)	(6,650.90)
Gross profit	3,754.80	2,911.60	3,592.40	3,830.10	4,047.30
GP margin	34.49%	31.80%	35.28%	36.91%	37.83%

b. How did the gross profit margins change over the years?

Provide your answer...

Feedback

M&S is a retail business and gross profit margin is a key figure in the management and assessment of their profitability. It can be noticed that the gross profit margin decreased steadily from 2018 to 2021. This was because there was a decline in the company's revenue whilst cost of sales remained almost constant. This may be explained by the pricing decisions of M&S and reflects discounting on the products being sold. Later on, there was a rather sharp decline in GP margin in 2021. One explanation for this sharp decline could be the Covid-19 pandemic. In 2022, the company was finally able to increase its sales by 18.88% compared to 2021. This can be calculated as:

= (10,885.10 − 9,155.70)/9,155.70 × 100

On the other hand, there was an increase of 14.19% in the cost of sales. This can be calculated as:

= (7,130.30 − 6,244.10)/6,244.10 × 100

This means that management was finally able to increase the value of its sales at a higher rate in comparison to the cost of its sales, resulting in an improved gross profit margin.

5.1.3 Return on sales

Return on sales (ROS) indicates the percentage of sales revenue left before payment of finance costs and corporation taxes. Return on sales is calculated as follows:

$$\text{Return on sales} = \frac{\text{Earnings before interest and tax (EBIT)}}{\text{Sales revenue}} \times 100$$

Earnings before interest and tax (EBIT) is also often referred to as ‘operating profit before interest and tax’, and some companies may refer to EBIT as ‘operating income’.

This is a key ratio showing a company’s basic operating performance or core income as a percentage of revenue or, in other words, the amount of net operating profit generated by each unit of revenue. It uses the profit arising from the organisation’s productive processes. This represents the core revenue generated by the business before the impact of financing decisions (interest costs), some one-off events and taxation are considered. The rationale behind what is or is not included comes from the key purpose of this ratio: to look at the organisation’s basic or ‘underlying’ performance. ROS is often the starting point for assessing what might be expected to happen in the future.

ROS provides a first-level indication about whether the organisation has a worthwhile market position. A high figure implies that the organisation’s outputs are sufficiently attractive to its customers and they are willing to pay a price that substantially exceeds the costs of providing that product or service. If it is a high figure, this indicates that the company has a good business model and/or product portfolio. Therefore, ROS assesses the viability of an organisation’s performance and is an essentially outward-looking ‘effectiveness’ measure. It is important to note that any company can achieve high sales simply by pricing well below the cost of production. A company can undercut the competition and make dramatic sales right up until it goes bankrupt. The sign of good management – of effective management – is being able to sell at a good profit because the products are attractive to the market (and not just low priced).

The ROS measure can be thought of as a way to cast light on the organisation’s marketing capability, albeit taking the broadest definition of marketing. The product line, the distribution process, the pricing and sales strategy are all aspects of the overall ROS result, and all of these factors are encompassed by the broad definition use of the term ‘marketing’. However, ROS also inherently includes an element relating to production efficiency, particularly if ROS is very low or negative, which might be because marketing (in the broad sense) is poor, or it might be because the costs of production are much too high. In the latter case, even if the marketing is excellent, competition economics means that it will be almost impossible to have a good ROS. Allied to this point is the fact that ROS measures tend to be similar within industrial sectors. Thus, comparing ROS to average sector values can be an effective benchmarking exercise leading to important questions such as: Why do some competitors produce more or less profit from revenue?

In the case of Remote Sensors Plc ROS can be calculated as follows:

	2025	2024	2023
Sales	17,860	16,995	15,990
Profit before interest and tax	4,120	3,515	3,484
Return on sales	23.07%	20.68%	21.79%

You can observe a slight decline in ROS from 2023 (21.79%) to 2024 (20.68%). One reason for this decline could be a reduced GP margin (calculated in Section 5.1.2), the impact of which is transferred here. However, management should investigate the causes of the reduction in ROS and make a conscious effort to control costs, as ROS is an index of corporate performance and can be used to compare one company to others in the same industry. Investors will often base their investment decisions on ROS. You can observe an improvement in ROS from 2024 (20.68%) to 2025 (23.07%). Again, one of the

reasons for this increase could be attributable to the increased gross profit margin. For improvements in future, this analysis suggests the need for an assessment of both cost and marketing functions within the company.

Activity 4 provides you with an opportunity to practise calculating ROS and to understand the significance of changes in ROS over time.

Activity 4 Calculating return on sales

Allow 15 minutes

Read the data on Marks & Spencer Group Plc's revenue and operating income from 2018 to 2022 (extracted from Fame) and answer the following questions.

a. Calculate ROS for the years 2018 to 2022.

	2022	2021	2020
	£m	£m	£m
Total revenue	10,885.10	9,155.70	10,181.90
Operating income	572.20	(30.70)	254.80
Return on sales	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Total revenue	10,885.10	9,155.70	10,181.90	10,377.30	10,698.20
Operating income	572.20	(30.70)	254.80	162.40	156.50
Return on sales	5.26%	(0.34%)	2.50%	1.56%	1.46%

b. How would you interpret the changes in ROS over the years?

Provide your answer...

Feedback

The ROS of the company was increasing steadily from 2018 to 2020. However, there was an operating loss in 2021 which resulted in a negative operating profit margin. Covid-19 is a responsible factor for that. However, the company bounced back in 2022, generating the highest net profit margin of 5.57% in the last five years.

You noticed in Activity 3 that the gross profit margin of the company was decreasing from 2018 to 2021. However, the company still managed to gradually increase its ROS. This analysis indicates that the management of the company was striving to control the company's costs to maximise profitability. However, in order to assess whether this rate of return is healthy and attractive for investors, more data about the rate of return on sales within the sector is needed.

c. Access Marks and Spenser Annual Reports online and compare the data provided in this activity with the data provided in those annual reports. Comment on the possible reasons for any discrepancies found.

Provide your answer...

Feedback

Companies restate their previous year's financial statements for correction of any errors found after the date of their publication. Restatement of financial statements becomes necessary when the errors result in any material inaccuracies in the information provided and can expose a company to the threat of being non-compliant with standards and regulations. These errors could creep in as a result of simple clerical mistakes to the more serious cases of incompetence, misrepresentation and fraud.

These restatements mean that there will be some variation in the financial figures reported across different accounting periods, and might also reflect when data is collected from different sources. It is important to be mindful of these variations and analyse data using a single source of information for maintaining consistency in analysis.

5.1.4 Expense analysis

The analysis of profit margins can be further extended through analysis of the relationship between operating expenses and revenue. These can be calculated for any expense item individually or in groups and can be calculated using the following formula:

$$\text{Expense}\% = \frac{\text{Expense item}}{\text{Sales revenue}} \times 100$$

The ratio for administrative expenses of Remote Sensors Plc is calculated as follows:

$$\text{Administrative expenses } \% = \frac{\text{Administrative expenses}}{\text{Sales revenue}} \times 100$$

	2025	2024	2023
Sales	17,860	16,995	15,990
Administrative expenses	3,150	2,820	2,630
Administrative expenses %	17.64%	16.59%	16.45%

Similarly, distribution expenses as a percentage of sales can be calculated by using the following formula:

$$\text{Distribution expenses } \% = \frac{\text{Distribution expenses}}{\text{Sales revenue}} \times 100$$

As a rule of thumb, the smaller the expense ratio, the better capacity a business has to keep earning profits even if there is a decrease in its sales volume. Businesses often use this ratio to analyse the viability of having any particular product in the product mix. For example, a manager may decide to keep producing a product with a very high expense ratio only because that product attracts customers into their shop. Once they are in, they may then buy a much more expensive product with a very low expense ratio.
Furthermore, expense ratios will vary from business to business depending on whether it is a labour-intensive business or a highly automated one. It will also vary from business to business depending on the nature of the costs (fixed or variable). Therefore, caution must be exercised when comparing expense ratios of organisations operating in different industries and producing different product mixes.

Activity 5 provides you with an opportunity to develop your skills in carrying out expense analyses using a company's financial data.

Activity 5 Practising expense analysis

Allow 15 minutes

Read the data on Marks & Spencer Group Plc's sales and administration expenses from 2018 to 2022 (obtained from Fame) and answer the following questions.

a. Calculate the administration expenses as a percentage of revenue for the years 2018 to 2022.

	2022	2021	2020	2019
	£m	£m	£m	
Total revenue	10,885.1	9,155.7	10,181.9	10,

	2022	2021	2020	2019
	£m	£m	£m	
Administration expenses	(3,125.9)	(2,713.0)	(3,036.4)	(3,
Administration expenses %	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your answe*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Total revenue	10,885.1	9,155.7	10,181.9	10,377.3	10,698.2
Administration expenses %	(3,125.9)	(2,713.0)	(3,036.4)	(3,271.1)	(3,426.2)
Administration expenses %	28.72%	29.63%	29.82%	31.52%	32.03%

b. How has this ratio changed over the years?

Feedback

The administration expenses of the company decreased steadily from 2018 to 2022. For stable and established businesses like M&S, if this ratio stays the same from year to year, it is also considered a good sign. However, a decline in this ratio indicates that the management of the company is making efforts to further control the company's operating costs to maximise profitability. It is also important to compare the administration expenses ratio to other competitors to gain a better idea of how the company is performing.

Having looked at gross profit margin, return on sales and expense ratios, it is also helpful to look at how to measure company profit compared to the capital and assets used to generate that profit. This is done by calculating return on capital employed, which you will see next.

5.1.5 Return on capital employed

Return on capital employed (ROCE) is a primary ratio used by investors and shareholders to evaluate the overall performance of the company. It compares the profit earned by the company with the capital employed to generate that profit.

ROCE is used to assess the value the business creates from the use of its assets and liabilities. If an investor has to choose between two companies with similar levels of capital employed, they will choose the business that generates the highest level of return.

The importance of capital employed

Shareholders invest their capital in a company in order to secure the best possible return on the risk that they take in investing their money. Long-term lenders lend money to a company and this is known as loan capital. Unlike shareholders, they do not participate in the growing profits of a business. Their concern is to receive payments of interest and, ultimately, the repayment of the original capital. Both share capital and loan capital are invested in assets, non-current and current, in order to generate an operating profit. This profit figure is most meaningful when it is given as a return on total capital employed in the business.

An investor needs to know what return is being generated by the capital invested in the business. This rate of return can then be compared with the returns that could be generated by investing in various other investment options. However, it is important to note that not all investments offer the same rate of return. Investments in some options will be riskier and offer better returns, while investing in other options might be less risky and offer lower returns. An investor will compare investments with similar risk profiles and choose the one which offers the best return on capital. What constitutes a good return will therefore be dependent on comparisons – with previous years and with other companies having similar risk profiles and in the same industry. In well-established businesses, this ratio will remain fairly constant over the years or may show a slightly increasing pattern from year to year.

Management also finds this ratio very useful because it shows the return generated on assets (which are presumed to be under management control) and evaluates if the operating profit from core activities of the business is sufficient to generate a return on the equity and finance debt in the business. Explanations might be sought if there are any abrupt changes in the ratio over the years. These changes might be caused either by fluctuations in the level of profitability or by changes in the capital structure of the company.

It is important to note that the definitions and formulas for ROCE vary and there is no standard governing how it is defined and calculated by a business entity. For example, capital employed might be expressed as net assets, that is, equity plus long-term loans (or total assets minus current liabilities). Alternatively, it might be defined as total assets, that is, equity + long term debt + current debt. No matter which definition of capital employed you use, consistency in the use of that definition is the key when you are analysing data over several years and/or across companies.

Below is the calculation of the return on capital employed for Remote Sensors Plc for 2025, using the following formula for ROCE:

$$\text{Return on capital employed} = \frac{\text{Operating profit (EBIT)}}{\text{Capital employed}} \times 100$$

$$= \frac{\text{Operating profit (EBIT)}}{(\text{Equity} + \text{current debt} + \text{non-current debt})} \times 100$$

$$= \frac{4{,}120}{(41{,}980 + 5{,}600 + 1{,}000)} \times 100$$

$$= \frac{4{,}120}{(48{,}580)} \times 100$$

$$= 8.48\%$$

It is important to mention that lease liabilities might also be added when calculating debt. However, in this course, lease liabilities are excluded when calculating current as well as non-current debt.

The calculations of ROCE follow for Remote Sensors Plc for 2023, 2024 and 2025, where capital employed is defined as equity + non-current debt + current debt. This definition of capital employed will be used in this course.

	2025	2024	2023
	£	£	£
Equity	41,980	40,155	37,790
Non-current debt	5,600	2,990	2,580
Current debt	1,000	1,745	1,900
Capital employed	48,580	44,890	42,270
Operating profit (PBIT)	4,120	3,515	3,484
ROCE	8.48%	7.83%	8.24%

In the case of Remote Sensors Plc, you may observe a decline in ROCE from 2023 to 2024; however, it increased again in 2025. You may observe that the capital employed by the company has been consistently increasing from 2023 to 2025. However, the company has not been able to maintain a consistent increase in ROCE. Therefore, the analyst must investigate the possible reasons for a decline in ROCE in 2024 and how management succeeded in improving returns in 2025. It is also important to compare this ratio with other competitors within the industry to gain a holistic picture of the company's performance.

Activity 6 provides you with an opportunity to practise calculating ROCE.

Activity 6 Calculating ROCE

Allow 15 minutes

Read the data on debt and operating profit for Marks & Spencer Group Plc from 2018 to 2022 (extracted from Fame) and answer the following questions.

a. Calculate ROCE for 2018 to 2022.

	2022	2021	2020	2019
	£m	£m	£m	
Equity	2,917.90	2,283.00	3,708.50	
Non-current debt	3,561.00	3,659.90	3,865.90	
Current debt	247.2	432.8	316.6	
Operating profit	572.2	(30.7)	254.8	
ROCE	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your ans*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Equity	2,917.9	2,283.0	3,708.5	2,681.0	2,956.7
Non-current debt	3,561.0	3,659.9	3,865.9	1,279.5	1,670.6
Current debt	247.2	432.8	316.6	513.1	125.6
Capital employed	6,726.1	6,375.7	7,891.0	4,473.6	4,752.9
Operating profit	572.2	(30.7)	254.8	162.4	156.5
ROCE	8.51%	(0.48%)	3.23%	3.63%	3.29%

b. How would you interpret the changes in ROCE over these years?

Provide your answer...

Feedback

There were no significant changes in ROCE from 2018 to 2020. Although the company's operating profit increased in 2020, there was also an increase in the

company's capital employed. ROCE fell drastically in 2021, when the company made a loss and the ROCE was negative. The Covid-19 pandemic was probably one of the reasons for this fall. In 2022, the company made an unusually high profit, resulting in a very high ROCE. It may signify that the company made a recovery from the disruptions caused by the pandemic.

Activity 7 provides you with an opportunity to calculate and interpret the profitability ratios using the financial statements of Next Plc and thus apply the concepts learnt in this session so far to interpret real company data.

Activity 7 Calculating profitability ratios

Allow 30 minutes

Access Next Plc accounts for the years ending 2022 and 2021. Look at the contents page of the annual report and locate the 'Consolidated Income Statement' and 'Consolidated Balance Sheet' to obtain the relevant financial figures for calculating the ratios. Then answer the following questions.

a. Calculate the following ratios to assess their profitability:
   - Gross profit margin
   - Operating profit margin
   - Return on capital employed.

Use the notes to the financial statements to retrieve more accurate or additional figures.

Use the following spreadsheet to carry out your analysis.

Profitability analysis – Next Plc

	Workings	2022	2021
		£m	£m
Total revenue		*Provide your answer...*	*Provide your answer...*
Cost of sales		*Provide your answer...*	*Provide your answer...*
Gross profit		*Provide your answer...*	*Provide your answer...*
Operating profit (PBIT)		*Provide your answer...*	*Provide your answer...*
Current debt (bank loans, overdrafts + bonds)		*Provide your answer...*	*Provide your answer...*

	Workings	2022	2021
		£m	£m
Non-current debt (corporate bonds)		*Provide your answer...*	*Provide your answer...*
Total debt		*Provide your answer...*	*Provide your answer...*
Equity		*Provide your answer...*	*Provide your answer...*
Capital employed = (equity + non-current debt + current debt)		*Provide your answer...*	*Provide your answer...*
Gross profit margin = (GP/Revenue) × 100	2022 =	*Provide your answer...*	*Provide your answer...*
	2021 =	*Provide your answer...*	*Provide your answer...*
Operating profit margin = (Operating profit/Revenue) × 100	2022 =	*Provide your answer...*	*Provide your answer...*
	2021 =	*Provide your answer...*	*Provide your answer...*
ROCE = Operating profit/Capital employed	2022 =	*Provide your answer...*	*Provide your answer...*
	2021 =	*Provide your answer...*	*Provide your answer...*

Feedback

Profitability analysis – Next Plc

	2022	2021
	£m	£m
Total revenue	4,625.9	3,534.4
Cost of sales	2,625.3	2,231.7
Gross profit	1,972.0	1,247.9
Operating profit (PBIT)	905.4	444.5

	2022	2021
	£m	£m
Current debt (bank loans and overdrafts + corporate bonds)	233.1	419.4
Non-current debt (corporate bonds)	815.7	837.0
Total debt	1,048.8	1,256.4
Equity	1,010.0	660.9
Capital employed = (equity + non-current debt + current debt)	2,058.8	1,917.3
Gross profit margin = (GP/Revenue) × 100	42.63%	35.31%
Operating profit margin = (Operating profit/Revenue) × 100	19.57%	12.58%
ROCE = Operating profit/ Capital employed	43.98%	23.18%

Workings

Gross profit margin

2022 = (1,972.0/4,625.9) × 100 = 42.63%

2021 = (1,247.9/3,534.4) × 100 = 35.31%

Operating profit margin

2022 = (905.4/4,625.9) × 100 = 19.57%

2021 = (444.5/3,534.4) × 100 = 12.58%

Return on capital employed

2022 = (905.4/2,058.8) × 100 = 43.98%

2021 = (444.5/1,917.3) × 100 = 23.18%

b. How would you interpret the changes in the ratios calculated above?

Provide your answer...

Feedback

There is an improvement in the gross profit margin of the company from 35.31% in 2021 to 42.63% in 2022. This improvement in gross profit margin was caused by an increase in the total revenue of the company in 2022, which could be due to better marketing, pricing strategy or sales mix. Operating profit margin also increased from 2021 (12.58%) to 2022 (19.57%). This implies that the company not only increased its revenues but also successfully controlled its costs. You may also observe a significant increase in ROCE from 23.18% in 2021 to 43.98% in 2022. Overall, all the ratios indicate better and improved profitability in 2022.

Liquidity and solvency

An organisation may have a good record of operating efficiency and profitability, but it could fail because its activities are financed inappropriately. Thus, the discussion that follows considers the ratios that assess the availability of finance for an organisation's activities in the short term, known as 'liquidity ratios', and those that assess its solidity from the financial point of view over the longer term, known as 'solvency ratios'.

5.2 Liquidity ratios

Liquidity ratios indicate how quickly a company can convert its current and most liquid assets into cash for the purposes of timely payment of its short-term liabilities. Companies that fail to effectively manage their liquidity can run the risk of insolvency and, therefore, lenders and investors who are considering whether to lend money to the business entity will be specifically concerned about the liquidity of the company. The following ratios can be used to assess the liquidity of an entity.

5.2.1 Working capital

Working capital, also known as net current assets, is the difference between a company's current assets and current liabilities. It is required by all companies to finance day-to-day trading activities and can be calculated as follows:

$$\text{Working capital} = \text{Current assets} - \text{Current liabilities}$$

The amount of working capital is a measure of a firm's ability to meet its short-term obligations and to complete the normal cycle of profitable operations. For a retailer, for example, it would buy goods and then sell them later in order to generate profits and then reinvest the profits back into the operations of the firm in a continual cycle. Without working capital a firm is not able to grow. The three main elements of working capital are trade receivables, trade payables and inventory.

Working capital for Remote Sensors Plc is calculated below.

	2025	2024	2023
	£	£	£
Current assets	13,298	15,696	12,160
Current liabilities	4,869	4,511	4,070
Working capital	8,429	11,185	8,090

A company can hold a sufficient level of inventories, allow sales on credit terms and make timely payments to its suppliers only if it has adequate working capital to finance these activities. However, the amount of working capital required will vary from business to business depending on the nature and size of the business.

5.2.2 Current ratio

The current ratio is the ratio of current assets to current liabilities and is calculated as follows:

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

This ratio assumes that the current assets can be converted into cash at their book value (i.e. at the value recorded in the accounts of the organisation), irrespective of the actual market value of the assets. In this way, current assets should provide a key flow of funds from which liabilities that are falling due within the year can be paid. The ratio carries two implicit assumptions that are unlikely to be met in a strict sense:

1. It assumes that payables (creditors) will be satisfied by payment within the year when, in practice, they will focus on a specific due date, which may be much more immediate. For example, if the trade payables allow 30 days for payment (which is a very common payment period), the bills represented by the figure in the balance sheet should probably already have been paid by the time the financial statements are released. If the business is trading normally, that set of liabilities will most likely have been replaced by a new set of roughly equal size, but suppliers may either be struggling to raise finance themselves or be concerned about the viability of their customers.
2. It also assumes that current assets will realise their book value. This may be true of some assets, such as cash or trade receivables, but it is not necessarily true of others, such as inventory, which may end up worth more than cost if sold into the retail market, or worth less if, for example, they are fashionable goods that miss their selling season. Trade receivables may not be collected fully, on the other hand.

Accepting these implicit assumptions for a moment, it is worth contemplating what the ratio implies. Logic would lead to the conclusion that if the ratio is equal to or greater than one, the company will have no liquidity crisis in the year. This, however, is too simplistic. At the very least, it ignores the time lag involved in the cycle of production, in that current assets may be illiquid at the time payment is demanded by the payables. Work in progress is a typical example since it is neither raw materials nor finished goods, either of which could be sold quickly if necessary (perhaps at a discount, but at least sold!).

Usually you would want to see a current ratio greater than one (that is, current assets greater than current liabilities). However, there are some industries that are very cash rich (e.g. supermarkets) that have low-value inventory and hardly any receivables, so their current liabilities often exceed their current assets without causing any anxiety to management. Due to the high daily cash flow from operations, there is confidence that all current liabilities will be met when due. For manufacturing businesses, which tend to have a relatively large inventory, a current ratio of about two is considered ‘safe’, but this is dependent on the actual industry. If you consider service industries – some of which require inventory (e.g. hotels or retailers) and some of which have hardly any inventory (e.g. architects or lawyers) – then giving a generalised target number for the current ratio is almost meaningless. This does not mean the ratio itself is not worthwhile, just that it needs to be seen within the context of the particular business sector.

Below is the calculation of the current ratio for Remote Sensors Plc.

	2025	2024	2023
Current assets	13,298	15,696	12,160
Current liabilities	4,869	4,511	4,070
Current ratio	2.73:1	3.48:1	2.99:1

In the case of Remote Sensors Plc, you can see that the ratio increased from 2023 to 2024 and declined in 2025. However, it is still 2.73 in 2025, which is well above the benchmark of 2:1 for manufacturing businesses. This ratio had been quite high in 2024, which may indicate poor inventory, cash or accounts receivables management by the company, because although a high ratio indicates good liquidity it also makes shareholders and investors question management's ability to manage the company's assets efficiently.

It is also sensible to consider the current ratio alongside the 'acid test ratio', which you will learn about in the next section.

Activity 8 provides you with an opportunity to practise calculating working capital and current ratio and will help you develop your skills for financial analysis and interpretation.

Activity 8 Calculating working capital and current ratios

Allow 10 minutes

Read the data on current assets and current liabilities for Marks & Spencer Group Plc from 2018 to 2022 (obtained from Fame) and answer the questions below.

a. Calculate
   i. Working capital
   ii. Current ratio.

	2022	2021	2020	2019
	£m	£m	£m	
Current assets	2,182.3	1,595.2	1,215.0	
Current liabilities	2,370.8	2,295.8	1,849.4	
Working capital	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your ans*
Current ratio	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your ans*

Feedback

(i) Working capital

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Current assets	2,182.3	1,595.2	1,215.0	1,490.4	1,317.9
Current liabilities	2,370.8	2,295.8	1,849.4	2,228.4	1,826.0
Working capital	(188.5)	(700.6)	(634.4)	(738.0)	(508.1)

(ii) Current ratio

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Current assets	2,182.3	1,595.2	1,215.0	1,490.4	1,317.9
Current liabilities	2,370.8	2,295.8	1,849.4	2,228.4	1,826.0
Current ratio	0.92:1	0.69:1	0.66:1	0.67:1	0.72:1

b. How would you interpret the changes in working capital and the current ratio of the company across these years?

Working capital

Provide your answer...

Current ratio

Provide your answer...

Feedback

Working capital: The company's working capital was always negative from 2018 to 2022. A negative working capital indicates that the company's current liabilities are more than its current assets and the company may not be able to pay its obligations when they fall due.

Current ratio: The company's current ratio was less than one from 2018 to 2022. A current ratio of less than one also indicates that the company's current assets are less than its current liabilities.

Both of these ratios indicate potential liquidity challenges faced by M&S and might imply a need for careful management of the company's current assets and obligations so that it does not run into trouble when financing its short-term obligations. However, it is also important to note that big retail businesses such as M&S tend to have current ratios below one as they do not have large credit sales (and hence low trade receivables), but have low levels of cash (as cash is invested in developing new projects) and high trade payables (as they easily obtain supplies on good credit terms). All these factors result in poor working capital and current ratios: this is a good example of why an understanding of the context and comparisons with other companies is of essence when analysing financial data.

5.2.3 Acid test ratio

The acid test ratio, also known as the 'quick ratio' or 'liquidity ratio', provides a more stringent test of a company's ability to meet its current obligations, by excluding the least liquid current assets, inventories, from the current ratio. The acid test ratio is calculated as follows:

$$\text{Acid test ratio} = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$$

Below is the calculation of the acid test ratio for Remote Sensors Plc.

	2025	2024	2023
	£	£	£
Current assets	13,298	15,696	12,160
Less: Inventory	(2,056)	(2,501)	(1,860)
Quick assets	11,242	13,195	10,300
Current liabilities	4,869	4,511	4,070
Acid test ratio	2.31:1	2.92:1	2.53:1

The purpose of calculating the acid test ratio is that business entities may not be able to readily sell their inventories, if needed. Some of the inventories might never be sold. If and when inventories are sold, they trigger a receivable which must then, in turn, be collected. Therefore, inventory cannot be regarded as a source to generate cash quickly. However, this depends on the nature of the business. For example, it might be particularly hard to sell inventories in the construction sector and the acid test ratio is a better indicator of their liquidity. The management of a company can improve the acid test ratio either by better

inventory management so that its cash in hand or receivables increases, or the ratio can be improved by reducing liabilities.

The range of satisfactory acid test ratio numbers is somewhat narrower than for the current ratio, although what is a ‘safe’ number still depends on the particular business circumstances within which the organisation operates. As a rule of thumb this ratio should ideally be above one. A figure below one indicates that a business may run into difficulties when paying its current liabilities and may raise concerns about the liquidity of the company. However, as with the current ratio, many companies have an acid test ratio of less than one without running into liquidity problems owing to the nature of their business.

As noted above, looking for an acid test ratio of ‘one plus a little bit’ is alright as a starting point, but you should be a little more sophisticated in your analysis. The key question when thinking about liquidity is: ‘Does enough cash flow in on a regular basis to cover the flows out that are anticipated?’

The purpose of Activity 9 is to develop your ability to calculate and interpret liquidity ratios using real company data.

Activity 9 Practising liquidity ratio analysis

Allow 15 minutes

Access Next Plc accounts for the year ending 2022 and 2021 and answer the following questions.

a. Calculate the following ratios to assess their liquidity.
   i. Current ratio
   ii. Acid test or quick ratio.

Use the notes to the financial statements to retrieve more accurate or additional figures.

Use the following spreadsheet to carry out your analysis.

Liquidity analysis

	Workings	2022	2021
		£m	£m
Current assets		*Provide your answer...*	*Provide your answer...*
Inventory		*Provide your answer...*	*Provide your answer...*
Current liabilities		*Provide your answer...*	*Provide your answer...*
Working capital		*Provide your answer...*	*Provide your answer...*

	Workings	2022	2021
Current ratio = Current assets/Current liabilities		*Provide your answer...*	*Provide your answer...*
Acid test or quick ratio = Quick assets/Current liabilities		*Provide your answer...*	*Provide your answer...*

Feedback

	2022	2021
	£m	£m
Current assets	2,407.2	2,288.6
Inventory	633.0	536.9
Current liabilities	1,208.1	1,196.8
Working capital	1,199.1	1,091.8
Current ratio = Current assets/Current liabilities	1.99	1.91
Acid-test/Quick ratio Quick assets/Current liabilities	1.47	1.46

Workings

Current ratio = Current assets/Current liabilities

2022 = 2,407.2/1,208.1 = 1.99

2021 = 2,288.6/1,196.8 = 1.91

Acid-test/Quick ratio = Quick assets/Current liabilities

2022 = (2,407.2 − 633.0)/1,208.1 = 1.47

2021 = (2,288.6 − 536.9)/1,196.8 = 1.46

b. How might you interpret the changes in these ratios? Write your thoughts in the box below.

Provide your answer...

Feedback

The current ratio indicates that the company should be able to pay its current liabilities as they fall due. There was a slight increase in the current ratio in 2022 (1.99:1) when compared to 2021 (1.91:1), and no apparent liquidity problems are indicated. The quick ratio of the company remained consistent from 1.46 in 2021 to

1.47 in 2022. Since Next is a retail business and needs to maintain high levels of inventory a quick ratio of 1.47 is also good and does not indicate any liquidity concerns for the company.

5.3 Solvency ratios

Another key area of financial statement analysis is an evaluation of how the business entity is financed in the long run. Investors and lenders are most interested in an analysis of the solvency of a company. The solvency ratios, including gearing or leverage ratios, analyse the overall capital structure of the company and compare long-term debt (loans) of a company either with its equity or assets. It is worthwhile noting that:

- Debt is generally cheaper than shareholders' funds given the different levels of risk taken by each finance provider. Debt financing makes it easier for management to estimate total fixed obligations and plan a fixed repayment schedule. The interest paid for servicing debt is a tax-deductible expense and results in lower tax obligations. Debt financing is also attractive for shareholders when they want to raise finance without diluting the shareholding structure of the company. However, debt brings with it the requirement to make interest payments and principal repayments at set times. It is a significant regular cash commitment for the organisation.
- Shareholders' funds require a greater return to compensate for the greater risk carried, linked to the subordinate status they have compared to debt if the firm is liquidated. However, they carry no obligation to provide returns at a set time. The return expected by equity holders can be provided, at least in part, by capital growth (i.e. share price rises for quoted companies), which does not require the immediate flow of cash out of the business.

In consequence, the greater the variability in performance, arguably the more the requirement for long-term finance should be met through shareholders' funds rather than debt: that is, the riskier the business, the greater the dependence on shareholders' funds rather than debt. Access to equity markets, however, may be a realistic option only for fairly large companies with established records. Small and medium companies have to rely on debt when entrepreneurs have no additional finance to invest in the venture. Otherwise, the company has to constrain its growth. Public sector organisations, by their very nature, do not have access to private equity.

The purpose of solvency ratios is to evaluate how much of the business's assets are owned by shareholders and lenders. More specifically, a focus is placed on the relationship between debt financing and equity financing. If a company's assets are owned mostly by its shareholders, then the company is said to be less leveraged and the level of risk associated with meeting long-term debt obligations is considered low. On the other hand, a company where most of the assets are financed by long-term debt is considered to have high leverage with a higher level of risk.

5.3.1 Debt ratio

The debt ratio is expressed as a percentage and the formula for calculating a debt ratio is as follows:

$$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}} \times 100$$

The debt ratio compares a company's total liabilities to its total assets. Debts (liabilities) consist of all payables, whether they are due within one year or after more than one year. Assets include all non-current and current assets. Lenders providing loans will be concerned that a company has enough assets to cover their liabilities. The more the debt ratio increases, the more banks and other potential lenders will be unwilling to advance further finance. As a very general guide, a debt ratio of 50% is often seen as a safe limit for debt. Lenders would be particularly interested in the trend of the debt ratio, especially if it is increasing, i.e. getting worse from their perspective.

Below is the calculation of the debt ratio for Remote Sensors Plc.

	2025	2024	2023
	£	£	£
Total assets	52,449	47,656	44,440
Total liabilities	10,469	7,501	6,650
Debt ratio	19.96%	15.74%	14.96%

For Remote Sensors Plc, there was an increase in the debt ratio from 2023 (14.96%) to 2024 (15.74%). However, it increased again in 2025 (19.96%). Since a debt ratio of less than 50% is considered safe, you can conclude that the debt ratio for Remote Sensors Plc remained relatively low in all three years.

While a company's level of debt is low, debt financing is provided by lenders at lower interest rates. When the level of debt becomes very high, for example say above 50%, then the financial risk for lending money becomes very high and lenders will also demand a higher interest rate. A low debt ratio indicates that Remote Sensors Plc has plenty of margin to obtain low cost debt financing if they demonstrate sufficient capacity to finance that debt in the future.

Activity 10 provides you with an opportunity to practise calculating and interpreting the debt ratio for a real company.

Activity 10 Calculating the debt ratio

Allow 15 minutes

Read the data on total assets and total liabilities for Marks & Spencer Group Plc from 2018 to 2022 (obtained from Fame) and answer the questions below.

a. Calculate the debt ratios for the years 2018 to 2022.

	2022	2021	2020	2019
	£m	£m	£m	
Total liabilities	6,525.5	6,351.6	6,475.4	4,
Total assets	9,443.4	8,637.4	10,183.9	7,
Debt ratio	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your answe*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Total liabilities	6,525.5	6,351.6	6,475.4	4,519.3	4,596
Total assets	9,443.4	8,637.4	10,183.9	7,200.2	7,550.2
Debt ratio	69.10%	73.54%	63.58%	62.77%	60.87%

b. How do you interpret the changes in the debt ratio of Marks & Spencer Group Plc?

Provide your answer...

Feedback

The debt ratio for M&S kept increasing steadily from 2018 to 2021. Although there was some decline in this ratio in 2022, it is still high and well above 50%. A high debt ratio can be an alarming sign for lenders who might become exposed to a risk in the recovery of their loan capital as well as the interest on the loan. However, it is also important to consider that large companies such as M&S usually have a very strong asset base that can serve as collateral for obtaining loans. These companies also generate substantial cash flows from their operations, which provides assurance to lenders on the debt financing capability of these companies. These companies have a strong market reputation and, owing to their size and financial stability, lenders lend them capital despite a very high debt ratio.

5.3.2 Leverage

Leverage focuses on the organisation's relative dependence on debt and equity (i.e. shareholders' funds). Most commonly used in the US, it can be calculated using the following formula:

$$\text{Leverage} = \frac{\text{Debt}}{\text{Shareholder's equity}} \times 100$$

Debt will include non-current debt and current debt. Once you have calculated the leverage ratio, you need to consider how the number should be interpreted. Comparisons with competitors, with sectors that you consider more or less risky, can help you to judge whether the balance between debt and equity is appropriate.

Leverage for Remote Sensors Plc is calculated as follows:

	2025	2024	2023
	£	£	£
Non-current debt – borrowings	5,600	2,990	2,580
Current debt – borrowings	1,000	1,745	1,900
Total debt	6,600	4,735	4,480
Equity	41,980	40,155	37,790
Leverage	15.72%	11.79%	11.85%

Activity 11 provides you with an opportunity to practise calculating and interpreting leverage ratios using real company data.

Activity 11 Calculating leverage

Allow 10 minutes

Read the data on debt and shareholders' equity for Marks & Spencer Group Plc for the years 2018 to 2022 (obtained from Fame) and answer the questions below.

a. Calculate leverage for the years 2018 to 2022.

	2022	2021	2020	2019
	£m	£m	£m	
Non-current debt	3,561.0	3,659.9	3,865.9	
Current debt	247.2	432.8	316.6	
Equity	2,917.9	2,285.8	3,708.5	
Leverage	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your ans*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Non-current debt	3,561.0	3,659.9	3,865.9	1,279.5	1,670.6
Current debt	247.2	432.8	316.6	513.1	125.6
Total debt	3,808.2	4,092.7	4,182.5	1,792.6	1,796.2
Equity	2,917.9	2,285.8	3,708.5	2,680.9	2,954.2
Leverage	130.51%	179.05%	112.78%	66.87%	60.80%

b. How do you interpret the changes in the leverage ratios of Marks & Spencer Group Plc?

Provide your answer...

Feedback

It can be observed that the leverage ratios for M&S were quite high in 2018 (60.80%); however, it kept rising exponentially over the years. Although a high leverage ratio is usually an alarming sign for lenders, a very strong asset base along with the cash flow generated through their business operations provides assurance to lenders about their ability to repay the loans. Given that M&S has a strong market reputation and, owing to their size and financial stability, lenders lend them capital despite their very high financial leverage.

5.3.3 Gearing ratio

The European version of leverage is called gearing. Like the debt and leverage ratios, the gearing ratio is given as a percentage. This ratio measures the relationship between the amount of finance provided by lenders and that provided by shareholders. Various definitions can be used to calculate gearing. In this module, gearing will be defined as:

$$\text{Gearing ratio} = \frac{\text{Debt}}{(\text{Debt} + \text{Shareholder's equity})} \times 100$$

Below is the calculation of the gearing ratio for Remote Sensors Plc

	2025	2024	2023
	£	£	£
Non-current debt – borrowings	5,600	2,990	2,580
Current debt – borrowings	1,000	1,745	1,900
Total debt	6,600	4,735	4,480
Equity	41,980	40,155	37,790
Debt + equity	48,580	44,890	42,270
Gearing ratio	13.59%	10.55%	10.60%

You may observe that there was an increase in the gearing ratio for Remote Sensors Plc from 2024 to 2025. However, the ratio is still very low and signifies that Remote Sensors Plc is under-geared and might make use of cheaper debt financing compared to equity financing to raise more capital in the future.

It is pertinent to note, however, that the higher the gearing ratio the greater the risk that a company will not have enough equity to pay off all outstanding long-term debts. Established businesses with a proven ability to grow profits and generate positive cash flow to service debts are able to have higher gearing ratios. This can benefit the shareholders as long-term debt is normally cheap for such companies and it also reduces the amount that shareholders have to invest in the business. While each company would have its own sensible level of gearing, it is normally assumed that a company is highly geared if it has a gearing ratio above 50%. Lenders are understandably very wary about any company which is highly geared.

When a business's solvency ratios increase significantly, risk increases for all lenders because more of them compete for whatever assets can be sold if the company runs into financial trouble. In the case of insolvency, for instance, providers of secured loans and employees are given priority over any unsecured lenders.

Activity 12 provides you with an opportunity to practise calculating gearing.

Activity 12 Calculating gearing

Allow 10 minutes

Read the data on debt and shareholders' equity for Marks & Spencer Group Plc from 2018 to 2022 (obtained from Fame) and answer the questions below.

a. Calculate gearing for the years 2018 to 2022.

	2022	2021	2020	2019
	£m	£m	£m	
Non-current debt	3,561.0	3,659.9	3,865.9	

	2022	2021	2020	2019
	£m	£m	£m	
Current debt	247.2	432.8	316.6	
Equity	2,917.9	2,285.8	3,708.5	
Debt + equity	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your ans*
Gearing	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your ans*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Non-current debt	3,561.0	3,659.9	3,865.9	1,279.5	1,670.6
Current debt	247.2	432.8	316.6	513.1	125.6
Total debt	3,808.2	4,092.7	4,182.5	1,792.6	1,796.2
Equity	2,917.9	2,285.8	3,708.5	2,680.9	2,956.7
Debt + equity	6,726.1	6,378.5	7,891.0	4,473.5	4,750.4
Gearing	56.62%	64.16%	53.00%	40.07%	37.81%

b. How do you interpret the changes in the gearing ratios of Marks & Spencer Group Plc?

Provide your answer...

Discussion

It can be noticed that gearing for M&S was relatively low in 2018; however, it kept increasing over the years and reached 64.16% in 2021. It was 56.62% in 2022, which is also considered a high level of gearing. However, as discussed earlier, established businesses with a proven ability to grow profits and generate positive cash flow to service debts are able to have higher gearing ratios. This can benefit the shareholders as long-term debt is normally cheap for such companies and it also reduces the amount that shareholders have to invest in the business.

5.3.4 Interest cover

Interest cover ratio measures the number of times the profit earned by a company covers its interest expense. It is calculated as follows:

$$\text{Interest cover ratio} = \frac{\text{Operating profit}}{\text{Interest expense}}$$

Interest cover is usually expressed as a multiple, so, for example, an interest cover of two times means the company's operating profits are twice the amount being paid as an interest expense (finance charge to lenders). Another way of putting it is to say that only half of its available operating profits are being used to pay its lenders. A company with an interest cover of one times is paying out all of its operating profits in interest. One with interest cover of less than one has to either borrow money to pay its current lenders or to draw down its existing cash resources. This is invariably a crisis situation, one normally where the company will be forced to pay very high interest rates. Such a situation greatly increases the likelihood of insolvency. A lender might be concerned if the interest cover is only one or less as it would indicate that there is little coverage for debt interest and that, if interest increases/profit declines, the lender may find their interest is not paid.

Below is the calculation of the interest cover ratio for Remote Sensors Plc.

	2025	2024	2023
Net interest payable	890	390	359
Profit before interest and tax	4,120	3,515	3,484
Interest cover ratio	4.63	9.01	9.70

You can observe that there is a significant decline in the interest cover ratio for Remote Sensors Plc from 9.01 times 2024 to 4.63 times 2025. This decrease occurred due to a significant rise in long-term interest-bearing loans and borrowings. However, the company is still in a good position to finance its interest expense from its operating profits.

The purpose of Activity 13 is to develop your skills to analyse and interpret various solvency ratios using the data of a real company.

Activity 13 Analysing long-term solvency

Allow 30 minutes

Look at Next Plc accounts for the year ending 2022 and 2021 and answer the following questions.

a. Calculate the following ratios to assess their financial leverage.
   i. Debt ratio
   ii. Leverage

iii. Gearing
iv. Interest cover.

Use the notes to the financial statements to retrieve more accurate or additional figures.

Use the following spreadsheet to carry out your analysis.

Long-term solvency analysis

	Workings	2022	2021
		£m	£m
Current debt (bank loans and overdrafts)		*Provide your answer...*	*Provide your answer...*
Non-current debt (corporate bonds)		*Provide your answer...*	*Provide your answer...*
Total debt		*Provide your answer...*	*Provide your answer...*
Equity		*Provide your answer...*	*Provide your answer...*
Operating profit (PBIT)		*Provide your answer...*	*Provide your answer...*
Interest (note 5)		*Provide your answer...*	*Provide your answer...*
Total liabilities		*Provide your answer...*	*Provide your answer...*
Total assets		*Provide your answer...*	*Provide your answer...*
		Provide your answer...	*Provide your answer...*
Debt ratio = (Total liabilities/Total assets) × 100		*Provide your answer...*	*Provide your answer...*
Leverage = Debt/ Shareholders' equity		*Provide your answer...*	*Provide your answer...*

	Workings	2022	2021
Gearing = Debt/(Debt + Shareholders' equity)		*Provide your answer...*	*Provide your answer...*
Interest cover = Operating profit (PBIT)/Interest		*Provide your answer...*	*Provide your answer...*

Feedback

Long-term solvency analysis

	2022	2021
	£m	£m
Current debt (bonds, bank loans and overdrafts)	233.1	419.4
Non-current debt (corporate bonds)	815.7	837.0
Total debt	1,048.8	1,256.4
Equity	1,010.0	660.9
Operating profit (PBIT)	905.4	444.5
Interest (note 5)	36.1	42.9
Total liabilities	2,971.8	3,097.1
Total assets	3,981.8	3,758.0
Debt ratio = (Total liabilities/Total assets) × 100	74.63%	82.41%
Leverage = Debt/Shareholders' equity	103.84%	190.10
Gearing = Debt/(Debt + Shareholders' equity)	50.94%	65.53%
Interest cover = Operating profit (PBIT)/Interest	25.08	10.36

Workings

Debt ratio = (Total liabilities/Total assets) × 100
2022 = (2,971.8/3,981.8) × 100 = 74.63%
2021 = (3,097.1/3,758.0) × 100 = 82.41%
Leverage = Debt/Shareholders' equity
2022 = (1,048.8/1,010.0) × 100 = 103.84%
2021 = (1,256.4/660.9) × 100 = 190.10%
Gearing = Debt/(Debt + Shareholders' equity)

2022 = [1,048.8/(1,048.8 + 1,010.0)] × 100 = 50.94%
2021 = [1,256.4/(1,256.4 + 660.9)] × 100 = 65.53%
Interest cover = Operating profit (PBIT)/Interest
2022 = 905.4/36.1 = 25.08
2021 = 444.5/42.9 = 10.36

b. How would you interpret the changes in these ratios? Use the box below to note your comments.

Provide your answer...

Feedback

Although the debt ratio has decreased from 82.41% in 2021 to 74.63% in 2022, the company is still highly geared. Similarly, the leverage ratio has also decreased from 190.10% to 103.84%; however, this decline is mainly attributable to a substantial increase in equity of the company, while the debt level has only slightly decreased. Gearing also shows a decline when compared to 2021. All of these ratios indicate that the company is highly leveraged, although the amount of leverage/gearing is decreasing as the company is now raising more capital through equity financing. An investor may perceive a high level of financial risk if investing in the company. However, the interest cover ratio of 25 shows that the company is able to cover its interest obligations very well and can comfortably service its debts. You may also observe that well-established and stable business organisations such as Next Plc tend to be highly leveraged as lenders trust lending money to them owing to their market reputation, financial stability, strong asset base, healthy and positive cash flows, and their ability to diversify risks across different segments.

5.4 Efficiency ratios

Investors, lenders and suppliers are particularly interested in an evaluation of how efficiently a company is operating. Efficiency ratios are the ratios that allow you to evaluate the performance of an organisation by considering its operating efficiency. An efficient organisation in this context is one that chooses the appropriate pool of assets and uses them in such a way that the maximum return is made for shareholders over time.

The cycle of production

The cycle of production refers to the process whereby cash, possibly after some period of credit, is used to purchase inputs (raw materials/services/goods), which are processed in some way to produce the organisation’s output (finished goods/services). The finished goods/services are sold for cash or create accounts receivable (also known as debtors), which are ultimately converted back to cash when the customers pay what is owed for the goods or services they have bought. By exploring this somewhat simplified representation of the cycle, you can begin to look at the risks that an organisation may face at each stage of the cycle of production. You can also systematically calculate ratios that will alert you to any trends or changes in the efficiency of aspects of production relative to other players in the sector.

Efficiency ratios aim to measure a company's effectiveness in employing a company's resources in production. For example, if a factory produced 1,000 laptops for sale in 2024, it was less efficient than the same factory producing 2,000 laptops in 2025 for sale as the factory is now better utilised if more laptops are produced from it. The efficiency ratios reflect on the revenues produced by the business from the amounts invested in business operations. These ratios include:

- asset utilisation ratio
- inventory turnover ratio
- receivables collection period
- payables payment period.

5.4.1 Asset utilisation ratio

This ratio is also called the asset turnover ratio or the capital turnover ratio. It assists in evaluating how well the assets in the business are being used to produce revenues. The higher the revenue, the more effectively the assets are being used. The asset utilisation ratio can be calculated by investigating the relationship between either some assets (for example, current assets, non-current assets, net assets), capital employed or total assets of a company. On a similar note, these assets can be related to sales revenue, gross profit or operating profit. For the purposes of analysis in this course, the following formula will be used for calculating the overall asset utilisation ratio:

$$\text{Asset utilisation ratio} = \frac{\text{Sales revenue}}{\text{Capital employed}}$$

The asset utilisation ratio is not a percentage. The resultant answer is expressed as the number of times in a financial year the sales can be divided by the capital employed in the business.

As you learnt earlier, capital employed in the business is used to buy assets to generate sales to produce the best possible operating profit. For convenience in this module, it is assumed for any ratio calculation that capital employed equals total shareholders' funds + debt. It is important to understand that assets, especially current assets, can also be funded by current liabilities, such as a bank overdraft, and not just by long-term capital and, therefore, current as well as non-current debt is included in the calculation of this ratio.

Below is the calculation of asset turnover ratio for Remote Sensors Plc.

	2025	2024	2023
	£	£	£
Equity	41,980	40,155	37,790
Non-current debt	5,600	2,990	2,580
Current debt	1,000	1,745	1,900

	2025	2024	2023
	£	£	£
Capital employed	48,580	44,890	42,270
Sales revenue	17,860	16,995	15,990
Asset utilisation ratio	0.37	0.38	0.38

Although this ratio can best be interpreted by looking at the performance of other competitors and industry averages, it can be noticed that there was a slight decline in the ratio from 2024 to 2025. The reasons for this decline need to be investigated further. For example, a company might have made more investments in assets which will take some time before they start paying off. It is also possible that the company is not able to sell its inventory of finished goods. It is also important to note that a decrease or increase in sales volume may or may not persist in future years. Therefore, in order to interpret this ratio fully, we also need to make use of more information about the company's future plans and projections.

In general, a higher ratio indicates the organisation is generating more revenue from the money invested in it and is therefore operating with greater efficiency. However, what represents a 'good' figure is very much sector dependent, as some processes inherently require high investment in production assets (think of a car plant or an aluminium smelter), while others may be labour intensive but 'asset-light' (a law firm could be such an example) and thus need less 'capital employed' to finance their assets. Just as ROS is an indicator of marketing effectiveness, but is influenced by the efficient control of costs, so too is the asset utilisation ratio mainly about efficiency but, because the ratio is based on revenue, it presumes that the marketing process is at least reasonable. If marketing is very poor, operations may produce the goods efficiently but with these ending up being reflected in inventory rather than sales.

It is also important to note that a decrease in asset utilisation may not always be a bad sign for the long-term financial health of a company. For example, if company management invests in non-current assets this year, the book value of company assets will increase and, although the new and more efficient assets might result in improved performance in the longer run, it will result in a deterioration in the asset utilisation ratio for the current year. Therefore, the companies that are expanding their business operations through investment in non-current assets might show a fall in their asset utilisation ratio.

Activity 14 provides you with an opportunity to develop numerical and financial analysis skills by calculating and interpreting asset utilisation ratios for a real company.

Activity 14 Calculating asset utilisation ratio

Allow 10 minutes

Read the data on debt and sales revenue for Marks & Spencer Group Plc from 2018 to 2022 (obtained from Fame) and answer the questions below.

a. Use the data to calculate the asset utilisation ratio for the years 2018 to 2022.

	2022	2021	2020	201
	£m	£m	£m	
Equity	2,917.9	2,285.8	3,708.5	
Non-current debt	3,561.0	3,659.9	3,865.9	
Current debt	247.2	432.8	316.6	
Sales revenue	10,885.1	9,155.7	10,181.9	
Asset utilisation ratio	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Equity	2,917.9	2,285.8	3,708.5	2,680.9	2,954.2
Non-current debt	3,561.0	3,659.9	3,865.9	1,279.5	1,670.6
Current debt	247.2	432.8	316.6	513.1	125.6
Sales revenue	10,885.1	9,155.7	10,181.9	10,377.3	10,698.2
Asset utilisation ratio	1.62	1.44	1.29	2.32	2.25

b. How do you interpret the company's utilisation of asset changes during these years?

Provide your answer...

Feedback

It can be observed that the asset utilisation ratio for M&S improved from 2.25 times in 2018 to 2.32 times in 2019. However, there was a sharp decline in the ratio in 2020 when it decreased to 1.29. A substantial increase in the company's non-current debt along with an increase in equity were responsible for this decline, while the company's sales revenue remained almost constant. There is a possibility that the company raised capital to initiate new projects and those projects may start generating returns in the future. However, this assumption needs to be investigated further. It can also be observed that the asset utilisation ratio started improving again in 2021 and this trend continued in 2022. This improvement occurred even though Covid-19 pandemic was adversely hitting all fashion and retail businesses and companies were struggling to maintain or improve sales volumes, and many

fashion retailers faced challenges related to store closures, disrupted supply chains and obsolescence of inventory.

5.4.2 Inventory days

The inventory days ratio is used to make an assessment of the effectiveness of inventory management in a business. It can be calculated by using the following formula:

$$\text{Inventory days} = \frac{\text{Closing inventory}}{\text{Cost of sales}} \times 365$$

Since the value of inventory is taken at cost, cost of sales is used when calculating inventory days. This ratio gives an indication of the number of days it may take to sell the normal or average level of inventory held by a business. It is important to note that although average inventory levels should be used to calculate this ratio, this information is hard to obtain in financial statements. The average of opening and closing inventories can be used to calculate average inventory. For convenience in this course, average inventory is replaced by closing inventory. Furthermore, this ratio is calculated based on the figure of cost of sales for the previous year and the cost of sales for future periods might be significantly different.

Below is the calculation of inventory days for Remote Sensors Plc. The number of days has been rounded to whole numbers.

	2025	2024	2023
	£	£	£
Closing inventory	2,056	2,501	1,860
Cost of sales	10,590	10,660	9,876
Inventory days	71	86	69

You can see that inventory days for Remote Sensors Plc increased from 69 days in 2023 to 86 days in 2024. An increase in inventory days may indicate that either inventory is sitting within the business for long periods of time or may signal problems in the ability of management to sell the company's products. Inventory days reduced again in 2025. Very short inventory days may indicate a high volume of sales, and management might face difficulties in meeting high demand for products and services due to inadequate levels of inventory. The nature of the business is crucial to interpreting inventory days. For example, fashion retailers such as Next or grocery supermarkets such as Tesco may have a very short inventory days ratio when compared to the manufacturers of high-end expensive products which may take a long time to manufacture.

Activity 15 provides you with an opportunity to practise calculating and interpreting inventory days of a real company and developing your skills for numeracy and analysis.

Activity 15 Calculating inventory days

Allow 10 minutes

Read the data on closing inventory and cost of sales for Marks & Spencer Group Plc from 2018 to 2022 (obtained from Fame) and answer the questions below.

a. Use the data to calculate inventory days for the years 2018 to 2022.

	2022	2021	2020	2019
	£m	£m	£m	
Closing inventory	706.1	624.6	564.1	
Cost of sales	7,130.3	6,244.1	6,589.5	
Inventory days	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide your ans*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Closing inventory	706.1	624.6	564.1	700.4	781.0
Cost of sales	7,130.3	6,244.1	6,589.5	6,547.2	6,650.9
Inventory days	36	37	31	39	43

b. How do you interpret the changes in inventory days during these years?

Provide your answer...

Feedback

Inventory days reduced from 43 days in 2018 to 39 days in 2019. This was a positive sign as the company was keeping its stock for a lower number of days. Later on, there was a further significant decline in inventory days in 2020 to 31 days, which implied that the stock retention time reduced by almost 8 days before that inventory was sold. Inventory days increased to 37 days in 2021, and remained at 36 days in 2022. For a retailer such as M&S, 36 inventory days may appear to be on

the higher side. However, it must be noted that the company has to maintain some inventory levels owing to the seasonal nature of its business. It is also important to note that changes in weather, the Covid-19 pandemic and the effects of inflation have also influenced consumers' buying behaviour and companies in the retail sector have had to retain inventories to deal with periods of uncertainty. Comparisons with other close competitors can, however, provide useful insights.

5.4.3 Receivables collection period

The receivables collection period calculates the average number of days a business takes to recover its credit sales and is only relevant if the business sells on credit. Although this ratio should ideally compare average accounts receivables with credit sales, these figures are often not available in the published financial statements. Therefore, it can be calculated using:

i. Either an average of opening and closing accounts receivables or simply by using closing accounts receivables.
ii. Sales figures from the financial statements instead of credit sales.

In this course, the following formula will be used to calculate the receivables collection period:

$$\text{Receivables collection period} = \frac{\text{Year-end accounts receivables}}{\text{Revenue}} \times 365$$

Below is the calculation of the receivables collection period for Remote Sensors Plc.

	2025	2024	2023
Accounts receivables	1,982	1,750	2,280
Sales revenue	17,860	16,995	15,990
Receivables collection period	41	38	52

The most useful way to interpret this ratio is by comparing the receivables collection period with the credit period a business normally allows to its customers. For example, a collection period of 38 days may seem very good initially until we discover that the business allows only 20 days to its customers for payment. Thus a higher collection period indicates problems with debt collection and stricter bill collection measures need to be pursued. In the case of Remote Sensors Plc, you can see a decrease in the receivables collection period from 2023 to 2024. It slightly increased in 2025 to 41 days. Generally, a lower receivables collection period ratio is considered good for business as it means that only a small proportion of a company's funds are locked up in accounts receivables. This

also reduces the risk of default in a company's accounts receivables. However, management might also consider that by having a very tight credit policy or allowing a very few days to accounts receivables for payment, the company may lose some good customers.

Activity 16 provides you with an opportunity to practise calculating as well as interpreting the receivables collection period of a real company.

Activity 16 Calculating Receivables collection period

Allow 10 minutes

Read the data on receivables and revenue for Marks & Spencer Group Plc from 2018 to 2022 (obtained from Fame) and answer the following questions.

a. Calculate the receivables collection period for the years 2018 to 2022.

	2022	2021	2020	20
	£m	£m	£m	
Accounts receivables	98.2	106.1	146.8	
Revenue	10,885.1	9,155.7	10,181.9	
Receivables collection period	*Provide your answer...*	*Provide your answer...*	*Provide your answer...*	*Provide you*

Feedback

	2022	2021	2020	2019	2018
	£m	£m	£m	£m	£m
Accounts receivables	98.2	106.1	146.8	118.6	113.9
Revenue	10,885.1	9,155.7	10,181.9	10,377.3	10,698.2
Receivables collection period	3	4	5	4	4

b. Can you envisage any problems with what this ratio indicates about the receivables collection period at M&S?

Provide your answer...

Feedback

You may observe that the receivables collection period for M&S has consistently been only a few days from 2018 to 2022 and that may give the impression that since

the company is a retail business, it is performing excellently in terms of debt collection. However, a closer analysis may reveal that most customers pay M&S at the point of purchase. Therefore, the revenue figure extracted from its annual report is mostly cash sales: credit sales will be a very small chunk of this total revenue figure. Therefore, comparing the company's accounts receivables with total revenue can be rather misleading in this type of business organisation where revenue is mainly generated by cash sales. This is the reason why it is important to be aware of the nature of the business being analysed and the composition of formulas used for calculating ratios, and to use the same formulas consistently when drawing comparisons.

5.4.4 Payables payment period

The payables payment period determines the average number of days a business takes to pay its trade payables. This ratio investigates the relationship between average trade payables and credit purchases. However, since the average trade payables figure is difficult to obtain, most financial analysts use the average of opening and closing trade payables. Alternatively, the value of trade payables reported at the end of the reporting period can be used. Similarly, since the value of net credit purchases is often difficult to find, cost of sales is used from the published financial statements. For this course, this ratio will be calculated as follows:

$$\text{Payables payment period} = \frac{\text{Year-end trade payables}}{\text{Cost of sales}} \times 365$$

Below is the calculation of the payables payment period for Remote Sensors Plc.

	2025	2024	2023
Trade payables	3,200	2,166	1,610
Cost of sales	10,590	10,660	9,876
Payables payment period	110	74	60

You can see that the payables payment period for Remote Sensors Plc increased considerably from 2023 to 2025. A higher payables payment period is considered good as it means that the business is conserving cash by not paying its trade payables as quickly and making use of the money elsewhere in the business. However, it may also mean that the business is not making effective use of any purchase discounts that it may receive if payments are made in a shorter window. It may also result in damaging its relationship with its suppliers if the terms of payment haven't been agreed with the suppliers. It may also signal that the company is facing cash flow problems and is unable to finance its obligations efficiently. The companies having liquidity problems often have longer

payables payment periods. However, in order to gain the full picture, it is important to take all other measures into consideration. For example, what does inventory turnover look like, and how long does the company take to recover cash from its receivables?

The purpose of Activity 17 is to develop your numeracy and financial analysis skills through the calculation and interpretation of efficiency ratios for a real company.

Activity 17 Practising efficiency ratios

Allow 10 minutes

Look at Next Plc accounts for the years ending 2022 and 2021 answer the following questions:

a. Calculate the following ratios:
   - Inventory days
   - Receivables collection period
   - Payables payment period
   - Asset utilisation ratio.

Use the notes to the financial statements to retrieve more accurate or additional figures.

Use the following spreadsheet to carry out your analysis.

Efficiency analysis

	Workings	2022	2021
		£m	£m
Total revenue		*Provide your answer...*	*Provide your answer...*
Cost of sales		*Provide your answer...*	*Provide your answer...*
Inventory		*Provide your answer...*	*Provide your answer...*
Trade payables		*Provide your answer...*	*Provide your answer...*
Trade receivables		*Provide your answer...*	*Provide your answer...*
Capital employed		*Provide your answer...*	*Provide your answer...*
Inventory days = (Inventory/ Cost of sales) × 365		*Provide your answer...*	*Provide your answer...*

	Workings	2022	2021
Receivables collection period = (Accounts receivable/Total revenue) × 365		*Provide your answer...*	*Provide your answer...*
Payables payment period = (Trade payables/Cost of sales) × 365		*Provide your answer...*	*Provide your answer...*
Asset utilisation ratio = Sales revenue/Capital employed		*Provide your answer...*	*Provide your answer...*

Feedback

Efficiency analysis

	2022	2021
	£m	£m
Total revenue	4,625.9	3,534.4
Cost of sales	2,625.3	2,231.7
Inventory	633.0	536.9
Trade payables (Note 17)	275.4	172.6
Trade receivables (Note 13)	1,187.1	1,041.5
Capital employed = (Equity + Non-current debt + Current debt)	2,058.8	1,917.3
Inventory days = (Inventory/ Cost of sales) × 365	88	88
Receivables collection period = (Trade receivables/Total revenue) × 365	94	108
Payables payment period = (Trade payables/Cost of sales) × 365	38	28
Asset utilisation ratio = Total revenue/Capital employed	2.25	1.84

Workings

Inventory days = (Inventory/Cost of sales) × 365

2022 = (633.0/2,625.3) × 365 = 88 days

2021 = (536.9/2,231.7) × 365 = 88 days

Receivables collection period = (Trade receivables/Total revenue) × 365

2022 = (1,187.1/4,625.9) × 365 = 94 days

2021 = (1,041.5/3,534.4) × 365 = 108 days

Payables payment period = (Trade payables/Cost of sales) × 365

2022 = (275.4/2,625.3) × 365 = 38 days

2021 = (172.6/2,231.7) × 365 = 28 days

Asset utilisation ratio = Total revenue/Capital employed

2022 = (4,625.9/2,058.8) = 2.25 times

2021 = (3,534.4/1,917.3) = 1.84 times

b. How would you interpret the changes in these ratios? Share your thoughts in the box below.

Provide your answer...

Feedback

There was no change in inventory days despite an increase in the levels of inventory, because cost of sales also increased. The receivables collection period ratio has reduced from 108 days to 94 days, which is a positive sign and indicates an improved and more efficient collection mechanism within the company. An increase in the payables payment period from 28 days to 38 days is also a positive sign as the company is now retaining cash for a longer time in the business. However, the company's receivables collection period is quite high in comparison to the payables payment period. An increase in the payables payment period also raises important questions of how this may be affecting the company's relationship with its suppliers, or whether the company is missing out on any early payment rebates. The asset utilisation ratio also shows an improvement and therefore indicates a more effective use of company assets in generating revenues.

Conclusion

This course explained how relevant information can be extracted from the annual reports of a company. The usefulness of ratio analysis as a tool for analysing financial statements was discussed and you learnt how to analyse and interpret profitability, liquidity, solvency and efficiency of a company.

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