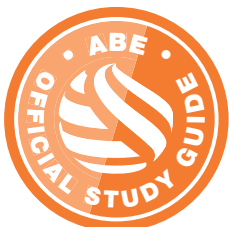


Your road to success

LEVEL 5 EFFECTIVE FINANCIAL MANAGEMENT



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Using your study guide

Welcome to the study guide for the **Level 5 Effective Financial Management**.

Below is an overview of the units of learning and related key capabilities (taken from the published syllabus).

Unit of learning	Key capabilities developed
Element 1: The objectives of financial management	<p>Ability to identify and understand the objectives of financial management</p> <p>Awareness of different stakeholders in the financial strategy that is used by a business and their role</p> <p>Awareness of the role of the finance function and of financial management within the wider business</p> <p>Appreciation of the agency problem and how it might be managed</p> <p><i>Analytical skills, commercial awareness, critical reflection, ethical appreciation, financial management, stakeholder management</i></p>
Element 2: Organisational activities, processes and performance	<p>Ability to discuss business objectives, organisational activities, organisational processes and performance measures and the link between them</p> <p>Ability to assess business performance using financial statements and key accounting ratios</p> <p>Ability to prepare projected financial statements for a business and interpret their significance for decision-making purposes</p> <p>Ability to recommend possible measures of business performance and wealth maximisation</p> <p><i>Analysis, planning and implementing, using reporting skills, numeracy, evaluation, preparation of accounts</i></p>
Element 3: Risk and financial management	<p>Ability to use suitable techniques to evaluate financial risks and their impact on organisational activities and decision-making</p> <p>Awareness of how different types of risk influence the pursuit of wealth maximisation</p> <p>Ability to calculate financial gearing for a business and awareness its significance</p> <p>Ability to evaluate different financial structures and assess their implications for the business</p> <p><i>Critical thinking, problem solving, numeracy, evaluation, ethical appreciation, financial management, decision-making</i></p>
Element 4: Sources of finance	<p>Knowledge of the main sources of internal and external sources of finance, including their key features</p> <p>Ability to discuss the factors to be taken into account when choosing an appropriate source of finance</p> <p>Ability to recommend an appropriate source of finance</p> <p>Ability to calculate the weighted average cost of capital for a business and assess its usefulness in making investment decisions</p> <p>Awareness of the methods by which share capital can be issued</p> <p><i>Numeracy, analysis of models, creativity, financial management, decision-making, commercial awareness</i></p>

Unit of learning	Key capabilities developed
Element 5: Investment appraisal	<p>Appreciation of the nature and importance of investment decision-making</p> <p>Knowledge of the key stages in investment decision-making</p> <p>Ability to apply techniques to evaluate investment opportunities, taking account of risk and non-financial factors</p> <p><i>Analytical, problem solving, analysis of models, numeracy, adaptability, decision-making, financial management</i></p>

This study guide follows the order of the syllabus, which is the basis for your studies. Each chapter starts by listing the learning outcomes of the course and the assessment criteria.

L5 descriptor

Knowledge descriptor (you...)	Skills descriptor (you can...)
<ul style="list-style-type: none"> Has practical, theoretical or technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts. Can analyse, interpret and evaluate relevant information, concepts and ideas. Is aware of the nature and scope of the area of study or work. Understands different perspectives, approaches or schools of thought and the reasoning behind them. 	<ul style="list-style-type: none"> Determine, adapt and use appropriate methods, cognitive and practical skills to address broadly defined, complex problems. Use relevant research or development to inform actions. Evaluate actions, methods and results.

In this study guide there are a number of features which we hope will enhance your studies.



'Over to you': activities for you to complete, using the space provided.



Case studies: realistic business scenarios to reinforce and test your understanding of what you have read.



'Revision on the go': use your phone camera to capture these key pieces of learning, then save them on your phone to use as revision notes.



'Need to know': key pieces of information that are highlighted in the text.



Examples: illustrating points made in the text to show how it works in practice.

Tables, graphs and charts: to bring data to life.

Reading list: identifying resources for further study, including Emerald articles (which will be available in your online student resources).

Source/quotation information to cast further light on the subject from industry sources.

Highlighted words throughout and **glossary terms** at the end of the book.

Note

Website addresses current as at July 2017.

Chapter 1

The Objectives of Financial Management

Introduction

In this chapter, you will consider the role and purpose of financial management in a business. Modern financial management is based on the idea that the primary objective of a business is to maximise the wealth of its shareholders. You will assess this idea and other possible objectives of a business to assess the implications of wealth maximisation and the needs of other stakeholders in financial strategy. For a business to survive and prosper, it needs to take account of the business environment in which it operates. Financial managers also need to balance wealth maximisation with risk, return and ethical considerations in order to ensure that financial practices reflect regulatory and ethical requirements.

Learning outcome

On completing the chapter, you will be able to:

- 1 **Assess the objectives of financial management and the role of different stakeholders in the financial strategy of a business**

Assessment criteria

- 1 **Assess the objectives of financial management and the role of different stakeholders in the financial strategy of a business**
 - 1.1 Assess the objectives of financial management in order to decide how best to formulate a financial management strategy that is used by a business
 - 1.2 Analyse the roles played by different stakeholders in order to select a financial management strategy that best meets the needs of stakeholders
 - 1.3 Discuss the ethical issues that need to be considered in financial management in order to ensure that financial practices reflect ethical requirements and standards

Level 5 Effective Financial Management

1.1 The objectives of financial management

Why do businesses exist?

A business can be viewed as an investment agency: its role is to acquire (also known as 'raise') finance and to then spend (also known as 'invest') that finance to generate a profit. This profit could then be reinvested in the business in order to generate more profit. Some or all of the profit could be returned to **shareholders** in the form of **dividends**. Effective financial management supports the acquisition, management and investment of financial resources and, therefore, the 'finance function' is central to the business.

In a capitalist system, shareholders are considered to be of paramount importance. They provide funds to businesses in return for ownership rights. Shareholders take risks when they invest in businesses; when times are good, shareholders will benefit from the wealth that is generated through dividends and increases in the market value of the ordinary shares that they own. In the bad times, shareholders may need to bear losses. If the business fails, shareholders may lose some or all of the funds that they have provided.

Shareholders invest in the expectation that they will receive the maximum possible increase in wealth in return for their investment. This key idea underpins modern financial management: the primary objective of a business is to **maximise the wealth of its shareholders**.

! NEED TO KNOW

The primary objective of a business is to maximise the wealth of its shareholders. Shareholders provide funds to businesses in the expectation that they will receive the maximum possible increase in wealth in return for their investment.



Atrill (2014) suggests that this view of a business is very much focused on its financial character and is probably a little simplistic. Later in this chapter, you will also see that wealth maximisation is a rather vague and complicated concept. Businesses do not exist in isolation from the environments in which they operate. Attempts to maximise the wealth of shareholders need to take a range of factors into account. The context in which the finance is raised and invested, and decisions on how to use profits, are of critical importance to a firm. What 'works' for one firm may be entirely inappropriate for another.

Consider some recent financing and investment decisions that have been made by major multinational businesses. Note the very different nature of the investment and financing decisions

made by each of these businesses. Whilst the need to maximise the wealth of shareholders will have been important in each of these decisions, each decision would have been taken in a very different context. A range of other factors, beyond the need to maximise the wealth of shareholders, would have had to be considered.

Company	Recent investment decision	Recent financing decision
Boeing	Began production of its 787 Dreamliner aircraft, at a forecast cost of more than \$10 billion	Cash flow from Boeing's operations allowed it to repay some of its debt
Royal Dutch Shell	Invested in a \$1.5 billion deep-water oil and gas field in the Gulf of Mexico	Returned \$13.1 billion in cash to its stockholders by buying back their shares
Toyota	In 2008, opened new engineering and safety testing facilities in Michigan	Returned ¥431 billion to shareholders in the form of dividends

Source: Brealey, Myers and Franklin (2014, p. 3)

Table 1: Recent financing and investment decisions by major multinational businesses



OVER TO YOU

Activity 1: Investment and financing decisions by businesses in your country

Identify some recent investment and financing decisions made by businesses in your country. Outline the factors, in addition to the maximisation of the wealth of shareholders, that might have been considered when making these decisions.

Beyond wealth maximisation: other factors in financial decision making

Businesses do not exist in isolation from the contexts in which they operate. Whilst wealth maximisation remains the primary objective of business, there is a need to take account of a range of other factors. The objectives of financial management include the need to balance wealth maximisation with these other factors.

Factor	Context
Risk and return	Decisions of any type relate to the future. An appropriate balance needs to be maintained between risk and return. In financial management, risk is considered to relate to circumstances in which all possible outcomes can be identified and quantified.
Legal form	Many businesses operate under the legal form of a company, be it private limited or public limited. A key feature of a company is limited liability: shareholders cannot be held personally responsible for the company's liabilities.
Corporate governance	Corporate governance relates to the practice of board leadership and to effectiveness, remuneration, accountability and relations with shareholders. A business's approach to corporate governance and the regulatory regime to which it is subjected will have a major effect on financial decision making.

Table 2: Other factors in financial decision making



! NEED TO KNOW

Effective financial management requires a need to balance the maximisation of shareholder wealth with a range of other factors. These factors include risk and return, legal form and corporate governance.



Critics of shareholder wealth maximisation argue that the pursuit of this objective has led many businesses to take financial decisions that cause conflict with other groups. These groups are typically referred to as stakeholders. Freeman and Reed (1983) define stakeholders as:

- **Stakeholders:** persons, groups or organisations that have an interest in a business, which can affect a business or that are affected by a business.

✎ OVER TO YOU

Activity 2: Stakeholder dialogue and wealth maximisation

Research online for the article by Kaptein and Van Tulder detailed in the reading list at the end of this chapter: Kaptein, M. and Van Tulder, R. (2003) "Toward effective stakeholder dialogue", *Business and Society Review*, 108 (2), pp. 203–224. If you are unable to access this paper, perform your own research online to answer the question that follows.

Consider the importance of stakeholders and how a dialogue with stakeholders has been used by businesses to improve approaches to reporting and, ultimately, to help to maximise wealth for shareholders.

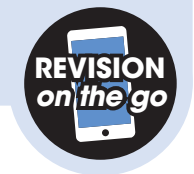


Stakeholders can be internal or external to the business. Examples of internal stakeholders include shareholders and employees. External stakeholders include suppliers and lenders. Some stakeholders are also more important than others: these key stakeholders will include shareholders, but other stakeholders might also be important due to the extent of their power to affect the business.

The stakeholder theory of financial management reflects the idea that investment and financing decisions should be guided by the need to create and maintain positive working relationships with key stakeholders.

! NEED TO KNOW

The stakeholder theory of financial management reflects the idea that shareholder wealth will be maximised if managers seek to create as much value as possible for all stakeholders. In order to succeed, managers must try to align the interests of shareholders with those of other key stakeholders.



📄 CASE STUDY

Liqui and Meifing's hairdressing business (Part 1)

Liqui manages a highly successful hairdressing business in Hong Kong. She started the business 10 years ago with her business partner, Meifing. Liqui and Meifing opened their first salon in Kowloon.

The business now comprises five salons in various areas of Hong Kong. Each salon has approximately 3000 customers per year, although the salon in Kowloon attracts 7000 customers per year. Most of the supplies that are used by the business are purchased from a single supplier.



The business was initially established as a partnership between Liqui and Meifing. Following a period of financial success, Liqui and Meifing decided to convert the legal form of the business to a limited company. Thirty investors purchased shares in the new company: one of these investors, a local businessman, owns 45% of the shares in the company.

Meifing has decided to retire and plans to sell her shares to one of the other investors.

Liqui plans to expand the business into mainland China. She plans to finance this expansion using a loan from a local bank.



OVER TO YOU

Activity 3: Stakeholder analysis in a small business

Using the case study information, identify the stakeholders that are likely to be affected by Liqui's plan to expand the business into mainland China (you may want to consider the extent of power and interest possessed by each stakeholder). Classify these stakeholders as internal or external. Identify who the key stakeholders might be and explain their importance.

Stakeholders can be important contributors to the success of the business. In the short term, some financial decisions may appear to contribute to the maximisation of shareholder wealth. Examples include aggressive cost cutting, employee redundancies and forcing suppliers to reduce prices. Longer term, cost cutting may lead to a failure to comply with legal requirements. Discontented staff may lead to low productivity; disgruntled suppliers may result in poorer quality resources and delayed deliveries. The failure to create positive working relationships and to align the needs of shareholders with those of other key stakeholders may, in fact, lead to the destruction of shareholder wealth.



OVER TO YOU

Activity 4: Other factors in financial decision making

Identify and explain three examples of financial decisions that might be taken to maximise shareholder wealth, but which might be considered to be unacceptable in terms of risk and return, legal form and corporation governance.

At the very least, there is a need for businesses to recognise the needs and demands of groups other than shareholders. The maximisation of shareholder wealth should be balanced with the risks associated with investment and financing decisions, the need to comply with legal requirements and a commitment to sound corporate governance. This approach is not contradictory to the primary objective of a business: in the longer term, shareholder wealth should still be maximised by avoiding the problems that often accompany the relentless and direct pursuit of short term wealth maximisation.

 OVER TO YOU

Activity 5: Shareholder activism

Read this article about shareholder activism in India: <https://www.ft.com/content/3f0aa396-7ba7-11e4-b6ab-00144feabdc0>.

Now, find out about shareholder activism in your country. Explain the effects of shareholder activism on financial management decisions.

Financial management and modern economic theory

Two key concepts underpin modern financial management: the **time value of money** (and the difference between the timing of cash flows and accruals) and the relationship between risk and return. We will return to these two key concepts many times in the study guide. For now, consider the outline of each:

- **Time value of money:** the value of money (cash) changes over time.

Financing and investment decisions can result in substantial cash flows that arise over long periods of time. \$1 received in the future does not have the same value as \$1 received today. Factors such as risk and opportunity cost will mean that \$1 received in the future has a lower value than \$1 received today. We can take account of the time value of money using the technique of discounting.

Also, financial management is concerned primarily with cash flows. Whilst much of the information (and some of the techniques) are based on the accruals concept and accounting profit, the timing of cash flows can often be of crucial importance.

- **Risk and return:** return refers to the financial rewards that arise as a result of an investment decision. Risk relates to the possibility that the actual return might differ from the expected return.

As in other aspects of life, risk and return in financial management tend to be related. Financial managers who commit to shareholder wealth maximisation should make investment decisions that provide the highest returns relative to the risks involved in those investments. We can take account of the relationship between risk and return using techniques such as investment appraisal and the **capital asset pricing model**.

 NEED TO KNOW

Modern financial management is underpinned by two key concepts: the time value of money and the relationship between risk and return.



1.2 The roles played by different stakeholders and their role in financial management strategy

Stakeholder analysis techniques

As we saw earlier in the unit, stakeholders are persons, groups or organisations that have an interest in a business, that can affect a business or that are affected by a business. The **stakeholder theory of financial management** reflects the idea that financial management decisions should be guided by the need to create and maintain positive working relationships with key stakeholders.

The need to manage these relationships gives rise to an important question: how can stakeholders be identified and analysed? A range of techniques exist that can help to answer this question. An outline of two of these techniques is provided here.

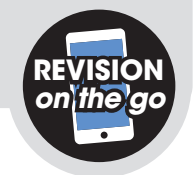
Porter's Five Forces Model

Porter's (1979) Five Forces Model provides a framework by which competitive factors might be identified. These competitive factors are driven by the firm's relationships with different stakeholders.

Porter (1979) use principles from industrial organisation economics to identify five factors that are considered to determine the level of competition (and also, therefore, the stakeholders) in an industry. Table 3 provides an overview of these factors.

Factor	Context
1 Intensity of rivalry amongst established businesses	Rivalry refers to the competitive struggle between companies within an industry to gain market share from each other.
2 Risk of potential entry	A high risk of entry by potential competitors represents a threat to the profitability of established companies. If the risk of new entry is low, established companies can take advantage of this opportunity, raise prices, and earn greater returns.
3 Bargaining power of buyers	The bargaining power of buyers refers to the ability of buyers to bargain down prices charged by companies in the industry, or to raise the costs of companies in the industry by demanding better product quality and service.
4 Bargaining power of suppliers	The bargaining power of suppliers refers to the ability of powerful suppliers to squeeze profits out of an industry by raising their prices and thus the costs of companies in the industry.
5 Availability of substitute products	The existence of close substitutes in the market is a strong competitive threat because this limits the price that companies in one industry can charge for their product, which also limits industry profitability.

Table 3: Porter's (1979) five factors that determine the level of competition in an industry



An analysis of these forces provides a means by which strategic risks in the form of 'threats' can be analysed and understood: threats arise when conditions in the external environment endanger the integrity and profitability of the organisation. Note that Porter's (1979) Five Forces Model is therefore a common feature of stakeholder identification and analysis in many businesses (Lynch, 2015).

Mendelow's (1991) Power–Interest Matrix

This approach seeks to map stakeholders in a way that reflects the emphasis that needs to be applied to their needs. This emphasis is determined using the extent of the impact (or 'power') and interest that the stakeholder may have on the activities of the business. If done correctly, this should allow the 'right' stakeholders to be identified and managed appropriately. See Figure 1.



Figure 1: Mendelow's Power–Interest Matrix



Low level of interest and low level of power: This group will usually follow instructions and accept the plan.

High level of interest, low level of power: These stakeholders are interested in the organisation but have no power. If not convinced about plans for the organisation, they may join with those with high power.

Low level of interest, high level of power: By keeping this group satisfied and not involved, they will not affect or influence the business.

High level of interest, high level of power: This group needs to be fully communicated with and listened to as they have the power to alter the course of the organisation if it is not in line with their view.

The power–interest matrix can be used alongside other approaches to stakeholder analysis. Stakeholders can be categorised as either external stakeholders or internal stakeholders.

External stakeholders are persons, groups or organisations who are impacted by the business. Examples include customers and community groups. **Internal stakeholders** are persons, groups or organisations who participate in and serve the needs of the business. Examples include investors and employees.

OVER TO YOU

Activity 6: Stakeholder mapping and the power–interest matrix

Re-read the Liqui and Meifing's Case Study.

Develop a power–interest grid for the stakeholder's of Liqui and Meifing's business.

Identify each of the stakeholders; then, rank each in terms of their power (think about the influence that they might have on the business) and the extent of their interest.

For tips on how to prepare a power–interest grid, use the following link:
<http://www.brighthubpm.com/resource-management/80523-what-is-the-powerinterest-grid/>

(Accessed: 27 February 2017)



! NEED TO KNOW

The stakeholder theory of financial management reflects the idea that shareholder wealth will be maximised if managers seek to create as much value as possible for all stakeholders. In order to succeed, managers must try to align the interests of shareholders with those of other key stakeholders.



1.3 Ethical considerations and financial management

Key ethical considerations in financial management

The need to maximise the wealth of shareholders and the difficulties that can be involved in the creation and maintenance of positive working relationships with key stakeholders have increased the likelihood that managers use methods that are regarded as unethical. Some managers may feel that unethical behaviour can be justified if it contributes to maximisation of shareholder wealth.

Atrill (2014) suggests that integrity and high standards of ethical behaviour are particularly important in financial management, where many opportunities for inappropriate and 'sharp' practice may exist. Financial managers must comply with financial reporting standards and professional requirements in much the same way as accountants. Some businesses have produced codes of ethical standards and behaviour for staff that are involved in financial management. Such codes seek to promote high standards of integrity and ethical behaviour in financial management.

📄 CASE STUDY

Shell plc's ethical code for executive directors and senior financial managers

Shell plc, a large firm in the oil and energy business, has a code of ethics for its executive directors and senior financial managers. The key elements of this code are that these individuals should:

- adhere to the highest standards of honesty, integrity and fairness, whilst maintaining a work climate that fosters these standards;



- comply with any codes of conduct or rules concerning dealing in securities;
- avoid involvement in any decisions that could involve a conflict of interest;
- avoid any financial interest in contracts awarded by the company;
- not seek or accept favours from third parties;
- not hold positions in outside businesses that might adversely affect their performance;
- avoid any relationship with contractors or suppliers that might compromise their ability to act impartially;
- ensure full, fair, timely, accurate and understandable disclosure of information that the business communicates to the public or publicly files.

Source: Atrill (2014, p. 16)



OVER TO YOU

Activity 7: Codes of ethical standards and behaviour for financial management

Find out about codes of ethical standards and behaviour for a business in your country. Explain how such codes might promote high standards of ethics and integrity in financial management.

Codes of ethical standards and behaviour for many contribute to high standards of integrity in financial management, but they are unlikely to provide a complete solution. Atrill (2014) suggest that those involved in financial management must appreciate the importance of fair play in building long-term relationships with stakeholders. As we saw earlier in the chapter, this is not contradictory to the primary objective of a business: shareholder wealth should still be maximised by avoiding problems that can arise due to poor standards of ethical behaviour in financial management.

Some businesses incorporate ethical considerations in a wider context. Whilst our concern is with integrity and high standards of ethical behaviour in financial management, it is important to consider this wider context. **Corporate social responsibility (CSR)** has been adopted as an objective by some businesses. Firms in the UK such as AstraZeneca and GlaxoSmithKline invest billions of pounds in CSR activities annually. It is important to recognise the shareholder wealth should remain the key concern of managers in these businesses. Social responsibility should play a supporting role within a firm's corporate objectives (Watson and Head, 2016).



NEED TO KNOW

High standards of ethical behaviour in financial management are not contradictory to the primary objective of shareholder wealth maximisation. Whilst opportunities for short-term profit may be foregone, the avoidance of problems that can arise due to poor integrity should help to promote wealth maximisation in the long term.



Agency theory

As we saw earlier in this chapter, the primary objective of a business is to maximise the wealth of its shareholders. For larger businesses, there is often a separation between the owners or shareholders (the principals) and the managers (the agents). Managers control the business on behalf of shareholders and should make decisions that maximise shareholder wealth. Whilst this relationship offers considerable benefits to investors, the **separation of ownership and control** can be problematic. An **agency problem** can occur when the managers of a business make decisions that are not consistent with the primary objective. For example, managers may be more concerned about maximising their own income or job security rather than the wealth of shareholders. It has been suggested that this was a contributory factor in the 2008 financial crisis.

Watson and Head (2016) suggest that three important factors contribute to the existence of the agency problems:

- 1 **Ownership and control:** those who own the company (shareholders) appoint agents (managers) to run the company on their behalf
- 2 **Goals:** managers are likely to seek to maximise their own wealth rather than the wealth of shareholders
- 3 **Asymmetry of information:** managers have access to detailed financial data, whereas shareholders only receive summary reports (that may have been subject to manipulation by managers). A recent example of this was a successful attempt by the Royal Bank of Scotland, a leading bank in the UK, to raise additional equity from its shareholders who, later, found out that the bank's financial position was weak.

! NEED TO KNOW

The agency problem can occur when the managers of a business make decisions that are not consistent with the objective of the maximisation of shareholder wealth. The agency problem arises due to three important factors: the divergence of ownership and control; differences in the objectives of managers and those of shareholders; and information asymmetry.



📄 CASE STUDY

Ethical considerations, the agency problem and subprime mortgages

The economic crisis of 2007–09 started as a subprime crisis. Subprime refers to mortgage loans made to homebuyers with weak credit.

Some of these loans were made to naïve buyers who faced severe difficulties in making interest and principal payments. Some loans were made to opportunistic buyers who were willing to gamble that real estate prices would keep increasing. However, real estate prices declined sharply and many of these buyers were forced to default.



Many banks and mortgage companies made these loans and then repackaged and sold them at a profit to other banks and financial institutions as mortgage backed securities. These banks and financial institutions, in turn, sold these securities to other parties, or held them with a view to making investment gains. The salaries and bonuses of the managers of these mortgages companies, banks and financial institutions were often linked to the levels of profit and investment gains generated.

When house prices fell and defaults increased in 2007, the prices of these securities fell drastically. Many banks and financial institutions incurred huge losses.

Source: Brealey, Myers and Allen (2014, p. 13)

OVER TO YOU

Activity 8: Ethical considerations, the agency problem and ethical considerations

Imagine that it is 2006 and you are a manager at one of the mortgage companies that made these subprime loans. Your salary and bonus is based on the profits that you generate from the loans that you make to buyers and the sale of these repackaged loans to other banks and financial institutions.

Using agency theory, explain the ethical issues that you might need to consider when making these decisions. Remember that your salary and bonus will be affected by the decisions that you make. Also, remember to develop your explanation using the agency problem.

Agency theory can seem a rather abstract idea. Hopefully, this case study has helped to illustrate some of the practical effects of the agency problem. The salaries and bonuses of managers, including financial managers, are often based on short-term measures of managerial performance. Managers may be encouraged to make decisions that are suboptimal, i.e. managerial behaviour that does not aim to maximise shareholder wealth.

From a financial management perspective, another important agency problem can exist between shareholders and the providers of debt finance. Shareholders (as agents) have a preference for the use of debt finance for progressively riskier investment projects, since they will benefit from the success of these investment projects. The providers of debt finance (as principals) bear the risks that arise from these investments. Mechanisms such as **restrictive covenants** are used to try to address this agency problem by limiting the amount of risk to which the providers of debt finance are exposed. We will return to many of these ideas later in the study guide.



OVER TO YOU

Activity 9: Agency theory

Read this paper by Mitrick (2006). A reference is provided at the end of this chapter. You can access the journal using the following link:

<http://www.pitt.edu/~mitnick/agencytheory/agencytheoryoriginrev11806r.htm>

Consider the differences between the economic and institutional theories of agency.

Imagine that you are an advisor to a group of shareholders. You have been asked to provide advice on how the system of compensation for managers should be designed to try to deal with the agency problem. Explain the mechanisms that might be used to encourage managers to act in the best interests of shareholders.

The economic theory of agency relates the selection of compensation (also known as reward) systems that will provide behaviour that is consistent with the preferences of the principal.

Shareholders must establish and maintain incentive systems that are consistent with the primary objective. Mechanisms such as performance related pay (PRP) and **share option schemes** can help to address the agency problem. PRP links management rewards to some aspect of financial performance: this rests on the selection of an accurate measure of performance. Share option schemes allow managers to purchase a specified number of the firm's shares at a specified price. This mechanism can be used to encourage managers to maximise the firm's share price (and also their own wealth if they choose to sell the shares that they have been allowed to purchase at a fixed price).

**NEED TO KNOW**

The agency problem can occur when the managers of a business make decisions that are not consistent with the objective of maximisation of shareholder wealth. The agency problem arises due to three important factors; the divergence of ownership and control; differences in the objectives of managers and those of shareholders; and information asymmetry. From a financial management perspective, an agency problem can also exist between shareholders and the providers of debt finance.



Corporate governance

Corporate governance relates to the practice of board leadership and to effectiveness, remuneration, accountability and relations with shareholders (Financial Reporting Council, 2016). Put simply, the aim of corporate governance is to ensure that “shareholders’ pockets are close to the managers’ hearts” (Brealey, Myers and Allen, 2014, p. 14). A firm’s approach to corporate governance and the regulatory regime to which it is subjected will have a major effect on financial management activities in the business.

The need for corporate governance is often rationalised in terms of agency theory. Corporate governance can also be seen as part of the attempt to secure high standards of integrity and ethical behaviour. It is important that you consider these issues together and that you understand the links between these three issues.

Corporate governance in the UK

In the UK, the **UK Corporate Governance Code** (Financial Reporting Council, 2016) provides the framework for corporate governance. This code addresses issues such as the role of executive and non-executive directors, the remuneration of directors and arrangements in respect of functions such as audit committees. The code is maintained by the Financial Reporting Council (FRC). The FRC is the independent regulator of corporate reporting, auditing and actuarial practice in the UK.

Different systems exist in other jurisdictions. For example, in Germany, a system of codetermination applies: larger firms have two boards of directors, one of which includes representatives elected from a firm’s staff and trade unions. In contrast to the ‘comply or explain’ approaches that are used in many countries, the corporate governance in the USA is ‘rules based’ and underpinned by legislation in the form of the Sarbanes–Oxley Act 2002.



OVER TO YOU

Activity 10: Corporate governance codes

The UK Corporate Governance Code (Financial Reporting Council, 2016) provides a framework for corporate governance for firms that are registered on the London Stock Exchange (LSE). All firms that are listed on the LSE must report on how they have applied the Code in the annual report and financial statements.

For an international perspective on corporate governance, take a look at the website of the International Corporate Governance Network: <http://www.icgn.org>

Find out about codes of corporate governance in your country. Explain how such codes might help to ensure that “shareholders’ pockets are close to the managers’ hearts”.

You may have found some differences between the approach to corporate governance in your country and that in the UK. Irrespective of the jurisdiction in which a firm operates and the corporate governance regime to which it is subjected, McLaney (2014) identifies three broad guiding principles of any approach to the regulation of corporate governance.

- 1 **Disclosure:** adequate and timely reporting of corporate financial performance and position.
- 2 **Accountability:** definitions of the roles and duties of directors. UK company law requires directors to act in the best interests of the investors in a firm.
- 3 **Fairness:** **'insider trading'** is illegal. Directors should not seek to gain from their privileged knowledge of the firm for which they work. Many stock exchanges place restrictions on the ability of directors to trade in the shares of the firms for which they work.

! NEED TO KNOW

Most approaches to corporate governance seek to regulate three aspects of corporate behaviour: disclosure, accountability and fairness.



READING LIST

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Chapter 2

Organisational Activities, Processes and Performance

Introduction

Whatever a business is trying to achieve, it is unlikely to be successful unless it plans in a systematic way and can evaluate the extent to which its plans have been achieved. Financial management plays a key role in financial planning and the evaluation of the performance of key organisational activities and processes.

Financial statements are a key source of financial information in financial management. They can be used to support both business planning and the evaluation of business performance. In this chapter, you will consider how projected financial statements can be used as part of a business's approach to planning. You will also consider how financial statements can be used to evaluate the performance of organisational activities and processes. An ability to examine, understand and interpret the information in financial statements also provides a grounding for much of the rest of the work of a financial manager.

Learning outcome

On completing the chapter, you will be able to:

- 2 Evaluate organisational activities, processes and performance using projected financial statements and measures of business performance.**

Assessment criteria

- 2 Evaluate organisational activities, processes and performance using projected financial statements and measures of business performance**
 - 2.1 Analyse business objectives, organisational activities and processes
 - 2.2 Evaluate business performance and financial management processes using financial statements and the calculation of key financial ratios
 - 2.3 Apply alternative techniques in order to evaluate the financial management of key organisational activities and processes

Level 5 Effective Financial Management

2.1 Analyse business objectives, organisational activities and processes

How do businesses plan for the future?

Remember that the fundamental role of a business is to acquire (or 'raise') finance and then to spend ('invest') that finance with a view to generating profit ('wealth') for its shareholders. Almost all aspects of this fundamental role involve decisions about the future. Financial management is inherently forward looking (Watson and Head, 2016). The cash flows that occur as a result of financing and investment decisions may arise over many years. Detailed operational processes will need to be planned to ensure that the implications of these decisions are managed appropriately.

The key steps in the development of business objectives and the planning of organisational activities are outlined in Table 1. You should note the role of financial management in each of these key steps. Also, note that the business will have developed a strategic analysis before it considers the first key step in the development of business objectives and the planning of organisational activities.

Key step	Description	Role of financial management
Setting objectives	The starting point for the business planning process. Provides a clear 'vision' and sense of direction for the business	Remember: the primary objective of a business is the maximisation of shareholder wealth. This must be reflected by the 'vision' and sense of direction for the business
Identifying options	The potential options that could lead to the achievement of the business objectives. Also known as strategies	Each of the strategies will have to be considered in terms of both their financing requirements and their investment implications
Evaluating options and making a selection	Each of the options must be examined and evaluated in the context of business objectives. Management must then select the most suitable option	A variety of financial management techniques can be applied to help management select the most suitable option

Key step	Description	Role of financial management
Developing plans for activities and processes	Day-to-day organisational activities must be consistent with long-term plans. Operational processes must be planned and managed appropriately	Financial management techniques can be used to support detailed planning and day-to-day management

Source: Atrill (2014, p. 32)

Table 1: Business planning and the role of financial management



The process of business planning and the role of financial management brings us back to the concept of stakeholders that we considered in Chapter 1. Different stakeholders will have different interests in the financial plans of a business.

CASE STUDY

Liqui and Meifing's hairdressing business (Part 2)

Let's return to the case study that we considered in Chapter 1.

Liqui and Meifing own a hairdressing business that comprises five salons in Hong Kong. The business was established as a partnership between Liqui and Meifing, but is now a limited company. A local businessman owns 45% of the shares in the company. The rest of the shares are owned by 30 other investors, who include Liqui and Meifing.



Liqui manages the business and plans to expand its operations into mainland China. She intends to finance this expansion using a loan from a local bank.

Meifing wants to retire in the near future and intends to sell her stake in the business to one of the other investors.

Each salon has approximately 3000 customers per year, although the salon in Kowloon attracts 7000 customers per year. Most of the supplies that are used by the business are purchased from a single supplier.

OVER TO YOU

Activity 1: The importance of financial planning to different stakeholders

Look back to the previous chapter. Using the list of stakeholders in Liqui and Meifing's business that you identified in Chapter 1, Activity 3, explain how the financial plans of the business will be important to each of the stakeholders.

The financial performance of a business is important to different stakeholders. Some of these stakeholders and their interests in the financial performance of a business are outlined here:

- **Owners:** prospective or existing investors often use expected future cash flows to choose and monitor their investments.
- **Lenders:** decisions on whether to lend money to a business might depend on a business's ability to pay interest and to repay the principal.
- **Managers:** managers need to assess the financial performance of their own business, different parts of their business and that of existing or potential competitors.
- **Employees:** employees will be interested in the prospect of the continuing financial health and performance of their employer.
- **Government:** taxation, regulation and the management of economic activity are all reasons why governments might be interested in the financial performance of businesses.
- **Suppliers:** continued business relationships and a business's ability to make payments for goods and services already supplied will be of interest to existing and prospective suppliers.
- **Investors:** investors will have an interest in the prospects for dividends and growth in the market value of the business's shares.

Note that most, if not all, of these stakeholders will have an interest in the future financial performance and financial position of a business. Historical information is certainly relevant in the sense that it can be used to identify important trends and patterns. As financial managers, effective financial planning rests on an ability to plan effectively and to develop organisational activities and processes that contribute to the maximisation of shareholder wealth.



OVER TO YOU

Activity 2: The importance of financial planning to different stakeholders

Read this paper:

Fosberg, R. (2012) "Determinants of short-term debt financing", *Research in Business and Economics Journal*, 6, pp. 1–11.

A reference is provided at the end of this chapter. You can access the journal using the following link: <https://aabri.com/manuscripts/111008.pdf>

Consider the evidence on the use of short-term debt financing by business. If the matching principle can be used to predict the amount of short-term debt financing accurately, consider how this might be important to managers in the preparation of financial plans.

! NEED TO KNOW

Financial management is inherently forward looking. The cash flows that occur as a result of financing and investment decisions may arise over many years. Detailed operational processes will need to be planned to ensure that the implications of these decisions are managed appropriately.



The role of **projected financial statements** and key financial ratios in planning

The key sources of information in financial planning are a business's financial statements. Financial statements provide a great deal of information about a business's strategy, market positioning and financial performance. Although financial statements are backward looking, the data that is contained in financial statements can provide a useful basis for financial planning. Whilst other sources of financial information might be useful in the development of business objectives and the planning of organisational activities (and also in the evaluation of financial performance), financial statements are often the most important source of information. The three primary financial statements and the purpose of each are:

- 1 The **income statement** (also known as a profit and loss account): how much wealth (or profit) was generated by the business during a particular period of time (most commonly over a 12 month period).
- 2 The **statement of financial position** (also known as a balance sheet): the accumulated wealth of the business, its assets and liabilities at the end of a particular period (the accounting period end would typically align with the income statement).
- 3 The **statement of cash flows**: showing the movements of cash into and out of a business during a particular period (generally the period would align to that used to create the income statement).

Financial statements contain a wealth of data that can be of use in the understanding, interpretation and evaluation of financial performance and position. Financial ratio analysis provides a focus on specific aspects of a business's financial performance and financial position. Key financial ratios can help to provide a deeper and more powerful understanding. Greater insight and a better interpretation of financial performance and financial position can be gained with financial ratios than that developed from simply reading the financial statements.

OVER TO YOU

Activity 3: An introduction to financial statements

Take a look at the introduction to financial statements provided by Baruch University. This should take approximately 45 minutes and is a superb introduction to the content, format and role of each of the financial statements listed above.

<http://www.baruch.cuny.edu/tutorials/statements/>

Before you move on to consider the rest of this unit, be sure that you are comfortable with the general appearance and purpose of each of the primary financial statements.

Remember: this study guide does not support a syllabus in financial accounting or financial reporting. However, an ability to examine, understand and interpret financial statements is a key skill in effective financial management.



Projected financial statements are created primarily for internal purposes (although they might be a requirement of lenders) and provide a rigorous and systematic basis by which the final two steps of the planning process (see Table 1) can be developed (Atrill, 2014). The financial effects of various ‘scenarios’ can be modelled and assessed. Option evaluation can be underpinned by an assessment of the effects of different options on, for example, profitability, revenues, non-current asset values and financing structure. Detailed plans for organisational activities and processes can be developed and interpreted via their impact on, for example, net current assets and operating cash flows.

Taken together, projected financial statements will provide a comprehensive picture of a business’s future financial performance and financial position. A financial ratio analysis based on projected financial statements can be used to develop and deepen the understanding and interpretation of projected financial performance and financial position.

Remember that financial management and financial reporting are fundamentally different disciplines. For example, financial management is forward looking and focuses on cash flows; financial reporting is historic in nature and focuses on profit. However, the use of projected financial statements is just one aspect of financial management that rests on financial reporting. Projected financial statements are a crucial planning tool in business planning and the management of key organisational activities and processes. Financial managers must be able to examine, understand and interpret the information that is contained in financial statements.

The data that is included in projected financial statements can then be used to calculate projected financial ratios. You will consider these financial ratios in greater detail later in the chapter. For now, consider the aspects of financial performance and financial position that they can be used to plan, forecast and model.

! NEED TO KNOW

Profitability & investor ratios	Working capital ratios	Liquidity ratios	Solvency ratios
Profit margins	Receivables collection period	Quick ratio	Debt ratio
Asset turnover	Payables settlement period	Current ratio	Financial gearing ratio
Return on capital employed			

Profitability & investor ratios	Working capital ratios	Liquidity ratios	Solvency ratios
Dividend payout Earnings per share	Inventory turnover period		

Table 2: Common financial ratios



OVER TO YOU

Activity 4: Projected financial statements as a planning tool

Can you think of any reasons why businesses are usually reluctant to publish projected financial statements?

Source: Atrill (2014, p. 34).

NEED TO KNOW

Projected financial statements are a **planning tool**. They provide a means by which the effects of different options can be modelled and assessed. The use of a structured and systematic approach allows the effects of different options to be considered in terms of key measures of financial performance and financial position. Projected financial statements can also be used to analyse and evaluate the effects of different options on detailed organisational activities and processes.



2.2 Evaluate business performance and financial management processes using financial statements and the calculation of key financial ratios

Preparing projected financial statements

Financial statements are a key source of financial information in financial management. The business planning process can be supported by the use of projected financial statements, which provide a comprehensive picture of a business's projected financial performance and financial position. Atrill (2014) argues that both the evaluation of options and the planning of key organisational activities and processes can be underpinned by the use of this rigorous and coherent approach.

The complexity of financial statements means that we could spend the whole chapter on this topic! We will focus on the calculation of some key balances in the projected financial statements.

Projected financial statements are part of the wider process of business planning. Each of the options identified as part of the business planning process needs to be considered in terms of their effects on the relevant elements of a set of financial statements. This can be a complex exercise. Whilst there are certain approaches and techniques that can be used to support the effective preparation of projected financial statements, remember that some aspects may be subjective.

CASE STUDY

Liqui and Meifing's hairdressing business (Part 3)

Imagine that you have been asked to prepare a set of projected financial statements for Liqui's hairdressing business (look back to the case study on p.22).

At this point in the unit, let's focus on projected revenues for the next three years (assuming that the business does not expand its operations into mainland China). Remember that the business has five salons in Hong Kong. Each salon has approximately 3000 customers per year, although the salon in Kowloon attracts 7000 customers per year.

Assume that the average price of hairdressing is \$30 per person, per visit.

Liqui expects that the population growth will increase demand for hairdressing services by 5% in each of the next three years. However, political factors mean that this growth might be limited to 2.5%.

Liqui plans to increase average prices to \$35 per person, per visit in Year 2. Liqui expects that this will not affect demand. However, industry analysts suggest that this could cause demand to reduce by 5%.



OVER TO YOU

Activity 5: Projected financial statements and taking account of risk

Prepare forecast revenue figures for inclusion in the projected financial statements for Liqui's business. Your projected financial statements should cover a three-year period: calculate projected revenues for each of years 1, 2 and 3. Note any assumptions that you make.

Source: Atrill (2014, p. 34).

Various methods exist that can be used to deal with the forecasting risks that surround some elements of projected financial statements. You will be given an opportunity to consider some of these techniques in greater detail in the next unit. For now, consider the outline explanations:

- Sensitivity analysis: models the effects of a chosen variable on projected financial performance and financial position. A number of variables may be modelled consecutively. In simple terms, sensitivity analysis can be seen as 'what if?' analysis.
- Scenario analysis: typically, this method applies 'best case' and 'worse case' scenarios. Unlike sensitivity analysis it allows the effects of a number of variables to be modelled simultaneously.
- **Expected values:** expected values can be calculated by applying probability estimates to projected balances. The multiplication of a projected balance by a probability provides an expected value.

The preparation of projected financial statements rests on the identification of the key variables that might have an effect on projected financial performance and financial position. These variables can be grouped into two broad categories, as shown in Table 3.

External variables	Internal variables
Tax rates	Capital expenditure commitments
Interest rates	Financing agreements
Price and wage inflation rates	Inventory holding policies
	Credit periods allowed to credit customers
	Payment policies for credit suppliers
	Accounting policies
	Dividend policies

Source: Atrill (2014, p. 35)

Table 3: External and internal variables in the preparation of projected financial statements



Note how external variables usually relate to government policies and to economic conditions. Internal variables cover policies, agreements and arrangements to which the business is committed.

! NEED TO KNOW

The preparation of projected financial statements rests on the recognition of two key issues; subjectivity and the need to identify key variables that might have an effect on projected financial performance and financial position. Techniques to help to deal with subjectivity include sensitivity analysis, scenario analysis and expected values. Key variables can be grouped into external and internal categories.



Projected income statement: revenues

The usual starting point in the preparation of projected financial statements is to forecast revenues. In most businesses, revenues set an upper limit on business growth and levels of operating activity (Atrill, 2014). The level of sales (and therefore revenues) will also influence other items in the projected financial statements, including cost of goods sold, inventories and trade receivables, so the accurate projection of revenues is crucial.

Watson and Head (2016) suggest that the projection of revenues comprises the following steps:

Step	Description
Apply scenario analysis	Identify 'best case' and 'worse case' scenarios
Time period	Identify the time period over which the projection needs to be prepared
Components	Identify the components that comprise a business's revenues. Examples include different geographical markets and different product types
Environmental reference points	Consider forecast growth rates in the sector, general economic conditions and competitor behaviour
Internal factors	Consider internal factors such as production capacity, historical growth rates, any planned expansion or reduction in sales

Source: Watson and Head (2014)

Table 4: Steps in the calculation of projected revenues



OVER TO YOU

Activity 6: Projected revenues and Tesco plc

Consider the following data from the 2013 annual report for Tesco plc (a major UK food and homewares retailer).

Comment on the performance of Tesco's business segments. What does the data suggest about where Tesco should be seeking to expand its business activities?

Revenues £m	UK	Asia	Europe	Tesco Bank	Total
Change on 2011/12	48,216	12,317	10,809	1,021	72,363
Share of total sales (%)	+1.8	+5.9	- 4.9	- 2.2	+1.3
Profits £m	66.6	17.0	14.9	1.4	100.0
Change on 2011/12 (%)	2,272	661	329	191	3,453

Revenues £m	UK	Asia	Europe	Tesco Bank	Total
Share of total sales	- 8.3	-10.3	- 37.8	- 15.1	- 13.0
Profit margin (%)	65.8	19.1	9.5	5.5	100.0
Profit before tax	5.2	5.8	3.5	18.7	5.3

Table 5: Projected revenues and Tesco plc



Once forecast revenues have been determined, estimated costs can be determined. For most businesses, the level of activity that drives forecast revenues will be a key factor in the estimation of costs.

Projected statement of financial position: net operating assets and non-current assets

Having forecast the level of sales and resulting revenues, it is possible to project the level of net operating assets (i.e. current assets – current liabilities) that is associated with this projection. A general starting point for this projected balance is the ratio of net operating assets to revenues during a historical reference period.

There is a clear link between the level of sales and the level of **accounts receivables**, inventories, **accounts payable** and other balances that comprise net operating assets. Factors such as general economic conditions may have an effect on some of these projected balances. For example, periods of economic recession may lead a business to offer extended credit terms to customers in order to encourage sales. This would need to be factored into a calculation of projected accounts receivables.

The pool of non-current assets required to produce a given level of sales output can also be calculated by reference to historical patterns. A reasonable projection of non-current asset balances can be made on this basis: the need for any investment in non-current assets in order to sustain projected revenues would have to be incorporated into this forecast.

As with net operating assets, projected non-current assets will need to take account of potentially distorting factors.

OVER TO YOU

Activity 7: Projected non-current assets

Think about the factors that have an effect on the reported value of non-current assets in a statement of financial position. Assuming that revenues remain constant and that there are no changes to a business's non-current asset base, what would cause a natural increase in the ratio of revenues to non-current assets?



CASE STUDY

Tavares Ltd

Extracts from the financial statements of Tavares Ltd and additional information are provided below.

Statement of financial position as at 31 March 2017

	\$000	\$000
Non-current assets		
Property	600	
Accumulated depreciation	(100)	500
Current assets		
Inventories	240	
Trade receivables	220	
Bank	165	625
Current liabilities		
Trade payables	268	



Additional information

- 1 Forecast sales for the year are \$1,400,000. 80% of sales are on credit. The average credit period is six weeks but it is likely that this will change to eight weeks in the forthcoming year.
- 2 At the year end, inventories are expected to be 25% higher than at the beginning of the year.
- 3 During the year the directors intend to pay \$40,000 to acquire new business property.
- 4 Total depreciation on property (including that acquired in 3) is estimated to be \$40,000.
- 5 All purchases are on credit. The average credit period taken will be 12 weeks in the forthcoming year.

Source: Atrill (2014, p. 61)

 OVER TO YOU

Activity 8: Projected statement of financial position: net operating assets and non-current assets

Use the information in the Tavares Ltd Case Study to calculate projected net operating assets and non-current assets for the year ended 31 March 2018.

Source: Atrill (2014, p. 61).

 CASE STUDY

The power of financial statements

Financial statements can be the source of very powerful information. Even without complete details or the actual financial results, financial statements can be used to make insightful judgements about a business.

The information in the table below has been extracted from recent statements of financial position produced by the following seven different types of business. You will use this information in Activity 9 below.

- 1 An air line
- 2 An oil/petroleum producing company
- 3 A lager beer producer
- 4 A fast food chain
- 5 A bank
- 6 A supermarket
- 7 A car manufacturer



	A	B	C	D	E	F	G
	%	%	%	%	%	%	%
Land and buildings	10	2	20	10	3	73	65
Plant, machinery and equipment	29	1	43	51	62	15	19
Inventory	14	–	11	2	12	1	9
Trade receivables	24	78	12	20	21	9	3
Cash and securities	23	19	14	17	2	2	4

	A	B	C	D	E	F	G
	%	%	%	%	%	%	%
Total assets	100	100	100	100	100	100	100
Shareholders' funds	26	5	42	34	36	39	47
Borrowings	25	3	17	33	25	43	18
Trade payables	17	91	22	25	32	12	28
Other liabilities	32	1	19	8	7	6	7
Total equity and liabilities	100	100	100	100	100	100	100



OVER TO YOU

Activity 9: Using financial statements

Using your understanding of financial statements and your general understanding of business, match each set of figures (A–G) with one of the companies (1–7) in the case study. Be prepared to justify your answers.

Projected statement of cash flows

Watson and Head (2016) identify three key roles for cash in a business. Firstly, it plays a transaction role in the production cycle as it is used to 'pay bills' or settle liabilities in order to trade. Cash balances are key to liquidity: assets held in the form of cash can be used to meet liabilities and to pay amounts owing almost immediately. Secondly, it plays an investment role in that it can be used to finance investments in non-current assets or to generate investment income. Businesses might also hold cash in a precautionary role in order to deal with unexpected or emergency requirements.

The projected statement of cash flows monitors future changes in liquidity and helps to assess the impact of expected future events on cash balances. Anticipated surpluses in cash can provide opportunities for investment. Forecast deficits can highlight the need for financing requirements.

A statement of cash flows comprises three elements:

- 1 Net cash flows from operating activities: cash flows from core trading operations, e.g. receipts from sales to customers, payments to suppliers

- 2 Net cash flows from investing activities: cash flows from the acquisition and disposal of non-current assets, e.g. the purchase of new property
- 3 Net cash flows from financing activities: cash flows from equity and debt transactions, e.g. the issue of new shares or the repayment of debt

When preparing a statement of cash flows for a short period, it can be useful to breakdown cash inflows and outflows on a monthly basis.

CASE STUDY

Projected statement of financial position: net operating assets and non-current assets

Extracts from the financial statements of Tavares Ltd and additional information are provided below (repeated from page 31).



Statement of financial position as at 31 March 2017

	\$000	\$000
Non-current assets		
Property	600	
Accumulated depreciation	(100)	500
Current assets		
Inventories	240	
Trade receivables	220	
Bank	165	625
Current liabilities		
Trade payables	268	

Additional information

- 1 Forecast sales for the year are \$1,400,000. 80% of sales are on credit. The average credit period is six weeks but it is likely that this will change to eight weeks in the forthcoming year.
- 2 At the year end, inventories are expected to be 25% higher than at the beginning of the year.
- 3 During the year the directors intend to pay \$40,000 to acquire new business property. The directors plan to finance this acquisition using a bank loan.
- 4 Total depreciation on property (including that acquired in 3) is estimated to be \$40,000.
- 5 All purchases are on credit. The average credit period taken will be 12 weeks in the forthcoming year.

Source: Atrill (2014, p. 61)

 OVER TO YOU**Activity 10: Projected statement of cash flows**

Use the information on Tavares Ltd in the case study above to calculate projected net cash flows from operating activities, investment activities and financing activities for the year ended 31 March 2018.

Source: Atrill (2014, p. 61).

 NEED TO KNOW

Cash plays three key roles in a business: a transaction role (to settle liabilities); an investment role (to finance investments); and a precautionary role (to deal with unexpected or emergency requirements).



REVISION
on the go

 OVER TO YOU**Activity 11: Projected statement of cash flows (as part of cash flow forecasting) and the importance of cash**

Read the paper by Elrod and Gorhum (2012). A reference is provided at the end of the chapter. You can access the journal using the following link: <https://aabri.com/manuscripts/121217.pdf>

Consider the importance of cash flows from operating activities and earnings from continuing operations. Reflect on the evidence that is presented in the study and how it might be used to inform the forecasting of these items in projected financial statements.

Projected financial statements, key financial ratios and their role in the critical evaluation of organisational activities and processes

There are many financial ratios that can be calculated. Generally, these financial ratios can be grouped into four main categories. These categories and some examples of the financial ratios in each are provided in Table 6.

Profitability and investor ratios	Working capital ratios	Liquidity ratios	Solvency ratios
Profit margins	Receivables collection period	Quick ratio	Debt ratio
Asset turnover	Payables settlement period	Current ratio	Financial gearing ratio
Return on capital employed	Inventory turnover period		
Dividend payout			
Earnings per share			

Table 6: Common financial ratios

REVISION
on the go

Whilst certain items in the projected financial statements and the results of particular financial ratio calculations might be relevant to a variety of issues, it is likely that profitability ratios (as measures of projected financial performance), liquidity ratios (as measures of short-term projected financial viability) and solvency ratios (as measures of longer-term projected financial viability) will appear in most financial ratio analyses. The evaluation of options and the planning of detailed operational processes are likely to be informed by the use of key financial ratios.

Projected financial statements and financial ratios can be used to identify financing gaps. Businesses need to carefully consider their trading activities to ensure that sufficient levels of liquidity and, longer term, solvency are maintained. Any temporary shortfalls in financing, particularly in cash, need to be identified and resolved.

In this unit, we will consider three key financial ratios and how their calculation and interpretation might be used as part of business planning and the management of key organisational activities and processes. These key financial ratios and the formulae for each are detailed in Table 7. We will return to these financial ratios and others in other parts of the study guide.

	Return on capital employed	Current ratio	Financial gearing ratio
Formula	Profit before interest and tax / (Equity + Long term debt) x 100/1	Current assets / Current liabilities	Debt / (Debt + Equity) x 100/1

Table 7: Key financial ratios in organisational activities, processes and performance

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 CASE STUDY

Northern Housing Ltd

Projected financial statements for Northern Housing Ltd are provided below.

Income statements	Year 1		Year 2		
	\$000	\$000	\$000	\$000	
Revenues		5,250		7,000	
Less: Cost of goods sold:					
Opening stock	890		910		
Add: Purchases	<u>3,695</u>		<u>6,195</u>		
	4,585		7,105		
Less: Closing stock	(910)	(3,675)	(1,785)	(5,320)	
Gross profit		1,575		1,680	
Less: Expenses	998		1,085		
Profit before interest & tax		577		595	
Less: Corporation tax provision	115		145		
Profit after tax		462		450	
Less: Ordinary dividend proposed	<u>280</u>		<u>175</u>		
Retained profit for year		182		275	
Add: Profit & loss balance at 1 January	<u>576</u>		<u>758</u>		
Profit & loss balance at 31 December		758		1,033	
		Year 1		Year 2	
		\$000	\$000	\$000	\$000
Non-current assets: @ net book value	4,690			5,678	
Current assets					
Stock / inventories	910			1,785	
Trade debtors / receivables	955			1,515	
Bank	<u>368</u>			0	
Total current assets			<u>2,233</u>		<u>3,300</u>
Current liabilities					
Trade creditors / payables	805			1,785	
Proposed dividend	280			175	
Corporation tax	115			145	
Bank overdraft	0			<u>875</u>	
Total current liabilities			(1,200)		(2,980)
Net current assets					
Non-current liabilities			1,033		320
10% debentures	(1,225)			(1,225)	
Net assets			4,498		4,773
Capital and reserves					
3.5m. Ordinary shares of £1 each	3,500			3,500	
Retained earnings	758			1,033	
General Reserve	<u>240</u>			<u>240</u>	
Total equity			4,498		4,773

 OVER TO YOU

Activity 12: Projected financial statements and key financial ratios

Use the information about Northern Housing Ltd in the case study to calculate return on capital employed, current ratio and financial gearing for each of the two projected years.

 NEED TO KNOW

Key financial ratios for use in the planning of organisational processes, activities and performance include:

- 1 Return on capital employed: $\text{Profit before interest and tax} / (\text{Equity} + \text{Long term debt}) \times 100/1$
- 2 Current ratio: $\text{Current assets} / \text{Current liabilities}$
- 3 Financial gearing: $\text{Debt} / (\text{Debt} + \text{Equity}) \times 100/1$


 OVER TO YOU

Activity 13: Projected financial statements and key financial ratios SAUER

Consider this short extract from the article by Sauer (2002).

In 1966, Edward I. Altman, New York University, proposed a method of forecasting bankruptcy utilizing constant discriminant analysis. The 66 firms in his study were all involved in manufacturing, and had shares that were publicly traded. The resulting “Z-Test formula” indicated which of the firms studied filed bankruptcy from the mid-40s to the mid-60s.

A Mid Point and Three Ranges Are Discovered

$Z = (.012X.sub.1) + [.014X.sub.2] + [.033X.sub.3] + [.006X.sub.4] + [.010X.sub.5]$ 100 where

Z = discriminant or score

[X.sub.1] = Working Capital divided by Total Assets (WC/TA)

[X.sub.2] = Retained Earnings divided by Total Assets (RE/TA)

[X.sub.3] = Earnings before Interest & Taxes divided by Total Assets (EBIT/TA)

[X.sub.4] = Market Value of Equity divided by Book Value of Total Debt (MVE/TL)

[X.sub.5] = Sales divided by Total Assets (NS/TA)

Altman's conclusion: Firms, in this study, with Z Scores above 2.675 tended to remain healthy, while those with scores below 2.675 tended to fail. One year before failing, 95 percent of the firms that fail have Z Scores of below 1.81. The "trend" of the Z Score is an important indicator.

Source: **Sauer, T. (2002)** How may we predict bankruptcy, *Business Credit*, September 2002, pp. 16–18.

Review the method for forecasting bankruptcy that was developed by Altman (1966). Consider how this model might be used in the planning and management of key organisational activities and processes.

2.3 Apply alternative techniques to evaluate the financial management of key organisational activities and processes

Horizontal and vertical analysis

Horizontal and vertical analyses facilitate the interpretation and evaluation of the projected financial performance and financial position of a business over time. These techniques can be particularly useful in helping to assess the reliability of the forecasts that underpin the projected financial statements. A base year is chosen and all projected balances from subsequent years are expressed as an index relative to the base year.

OVER TO YOU

Activity 14: Horizontal analysis

The following data have been extracted from the projected financial statements of a business. The data cover four years (Year 1 to Year 4). Note how the financial data has been used to develop an index, with Year 1 as the base year. Year 1 has been used as the base for the index (and given an indexed value of 100). The indexed data in year two has been expressed relative to the indexed data in year one. For example, the indexed figure for revenue in year two was calculated as follows:

$$(600 / 500) \times 100 = 120$$

Complete the indexed data for years 3 and 4. Analyse the indexed data and identify any trends or factors that you consider might be worthy of further investigation.

Projected £000s					Index			
1	2	3	4	Years	1	2	3	4
500	600	700	800	Revenue	100	120		
125	180	210	240	Cost of sales	100	144		
100	90	112	136	Distribution costs	100	90		
50	66	84	104	Administration expenses	100	132		
225	264	294	320	Profit from operations	100	117		
10	12	14	40	Finance costs	100	120		
215	252	280	280	Profit before tax	100	117		
75	96	98	96	Corporation tax	100	128		
140	156	182	184	Profit after tax	100	111		

The focus of a horizontal analysis such as that in Activity 14 rests on the projection of balances over time and on an understanding of the nature of financial statements. Important relationships exist between many of these balances. For example, in an income statement, an increase in projected revenue would need to be interpreted in the context of changes in projected costs that are associated with the generation of that revenue. Unless the increase in projected revenue is supported by, for example, a planned increase in the unit selling price of a business's products or services, then we might question the reliability of a projected increase in revenues.

Knowledge of the business and the industry in which it operates would be needed to identify the projected costs that might vary in relation to projected revenues.

In Activity 14, projected revenues increase steadily and by 60% over the four-year period. However, projected cost of sales and administrative expenses increase by 92% and 108%, respectively. We might question a number of these projections, including the reliability of the balances for projected cost of sales and administrative expenses. Why are they expected to increase at a greater rate than projected revenues? What factors have led to these projections? Are the projections accurate and reliable?

! NEED TO KNOW

Techniques such as horizontal and vertical analysis provide a useful supplement to the use of projected financial statements and key financial ratios. They can be particularly useful in helping to assess the reliability of projected financial statements and to provide a 'reality check' for some of the forecasts that might be reflected in projected financial statements.



Per-cent-of-sales method and its use in financial planning

A simpler approach to the preparation of projected financial statements is provided by the per-cent-of-sales method. Using this technique, most projected balances are forecast as a percentage of the sales revenues that are forecast for a period. This has the benefit of simplicity although it could be seen to lack the precision that is offered by other approaches to forecasting (Watson and Head, 2016).

Historical trends are assumed to apply in the future although there are some exceptions to this principle. Examples include:

- **Tax:** tax is assumed to be a function of profit before tax and so should be forecast as a percentage of profit before tax
- **Non-current assets:** these amounts do not vary with revenues unless they are operating at full capacity (any increase in sales would imply the acquisition of additional non-current asset capacity)
- **Non-current liabilities and equity:** like non-current assets, these amounts do not vary in relation to revenues. They remain fixed unless the business decides to take action to increase or decrease these balances.

CASE STUDY

Clutterbuck Ltd

Extracts from the financial statements of Clutterbuck Ltd and additional information are provided below.

Income statement for the year ended 31 March 2017

	\$000
Credit sales revenue	800
Cost of sales	(600)
Gross profit	200
Selling expenses	(80)
Distribution costs	(20)
Other expenses	(20)
Profit before taxation	80
Taxation (25%)	(20)
Profit for the year	60



Additional information

- 1 Credit sales revenues are expected to increase by 10% in the year to 31 March 2018.
- 2 The tax rate for the year ended 31 March 2018 will be 35%.

Source: Adapted from Atrill (2014, p. 47)

OVER TO YOU

Activity 15: Per-cent-of-sales method

Use the information about Clutterbuck Ltd in the case study and the per-cent-of-sales method to prepare a projected income statement for the year ended 31 March 2018.

Source: Adapted from Atrill (2014, p. 47).

! NEED TO KNOW

When using the per-cent-of-sales method to prepare projected financial statements, remember that projected balances for tax, non-current assets, non-current liabilities and equity do not vary in relation to revenues.



READING LIST

- Atrill, P. (2014) *Financial management for decision makers*. 7th edition. Harlow: Pearson.
- Baruch University (2017) *Guide to financial statements* (Online) <http://www.baruch.cuny.edu/tutorials/statements/>. (Accessed 27 February 2017.)
- Elrod, H. and Gorhum, M. (2012) "Fraudulent financial reporting and cash flows", *Journal of Finance and Accountancy*, 11, pp. 1–7.
- Fosberg, R. (2012) "Determinants of short-term debt financing", *Research in Business and Economics Journal*, 6, pp. 1–11.
- Sauer, T. (2002) "How may we predict bankruptcy?", *Business Credit*, September, pp. 16–18.
- Watson, A. and Head, A. (2016) *Corporate finance: principles and practice*. 7th edition. Harlow: Pearson.

Chapter 3

Risk and Financial Management

Introduction

The range and complexity of the different types of risk and the impact that they could have on a business can seem overwhelming. The focus of this chapter on risk and financial management is understanding how to ensure that financial risks are reflected in a business's financial management processes.

Risk is a critical factor in financial management. A financial decision can have major implications for the success or even survival of a business. You will consider how to use models and techniques to evaluate the effects of financial risks and to ensure that financial management decisions meet the needs of the business. You will also examine how approaches to financial risk management can be used to reduce a business's exposure to financial risks.

You will return to many of the concepts, models and techniques that are introduced in this chapter later in the study guide.

Learning outcome

On completing the chapter, you will be able to:

- 3 Evaluate financial risk using suitable techniques in order to apply approaches that reduce exposure to financial risks**

Assessment criteria

- 3 Evaluate financial risk using suitable techniques in order to apply approaches that reduce exposure to financial risks**
 - 3.1 Assess the importance of financial risk in order to select appropriate financial management techniques
 - 3.2 Evaluate financial risk using suitable techniques in order to ensure that financial management decisions take account of financial risks
 - 3.3 Apply approaches to financial risk management that reduce exposure to financial risks

3.1 Assess the importance of financial risk in order to select appropriate financial management techniques

The nature of risk and its importance in financial management

In essence, a single issue is at the heart of financial management: how do businesses make financial decisions? This rather short question raises some very important issues. A financial decision can have major implications for the success or even survival of a business. Decisions of any type relate to the future. As McLaney (2014) notes, however much we may regret past actions, we cannot alter them!

Risk is a critical factor in financial management. Others involve such large amounts and have such a long-term timescale that, if things go wrong, the impact could be both significant and lasting (Atrill, 2014). Some financial decisions are so important that, if the wrong decision is taken, it could lead to the collapse of the business.

! NEED TO KNOW

Effective financial management requires the consideration of a number of different types of risk. Examples include:

Financing risk: the risk that a business is unable to finance (or refinance) its activities.

Examples include the need to replace debt finance that has matured with new debt finance

Liquidity risk: the risk that a business may be unable to meet short term financial liabilities

Currency risk: the risk of loss from fluctuating exchange rates

Credit risk: the risk of default on a debt that may arise from a borrower failing to make required payments

Investment risk: the probability or likelihood of losses relative to the expected return on an investment



Financial managers must seek to establish an appropriate balance between risk and return. Look back at the examples of recent financing and investment decisions that have been made by major multinational businesses that were presented in Chapter 1. Consider the nature of the risks that would have been considered when making these decisions. For example, a \$10 billion in the

production of new aircraft by Boeing is likely to give rise to a range of different types of risk. It is also likely to have effects and consequences across a considerable period of time.

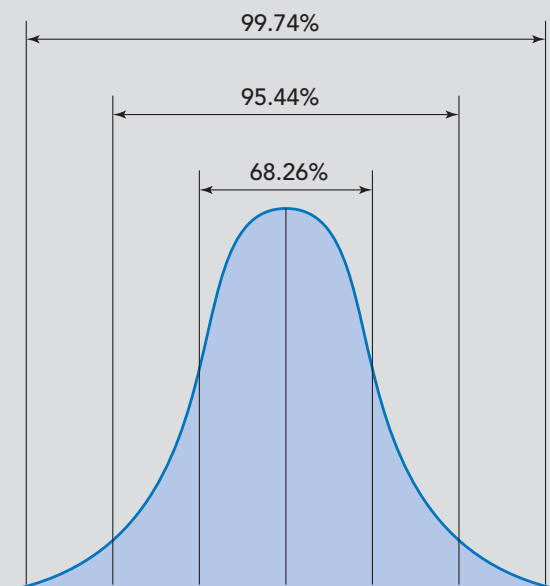
At this stage, note the difference between risk and **uncertainty**. In financial management, the former relates to circumstances in which all possible outcomes can be identified and quantified. Atrill (2014) defines risk as the likelihood that what is estimated to occur will not actually occur. Consider, for example, an investment decision. An investor expects to receive a particular return as a result of her investment; risk refers to the likelihood that the actual return may differ from the anticipated return.

Uncertainty relates to a position in which all possible outcomes cannot necessarily be identified and/or quantified.

! NEED TO KNOW

In financial management, risk and uncertainty are two very different concepts. Risk relates to the likelihood that what is estimated to occur will not actually occur. Importantly, the estimate is made following the identification and estimation of all possible outcomes.

Uncertainty relates to circumstances in which all possible outcomes cannot necessarily be identified and/or quantified.



Source: <http://curvebank.calstatela.edu/gaussdist/gaussdist.htm> [Accessed: 28 February 2017]

Figure 1: Normal distribution



The **normal distribution** has been widely adopted in financial management. Its mathematical properties as a probability theory provide a basis with which to quantify risk in many different contexts. When the number of random variables is sufficiently large, they will be 'normally distributed' around the mean average or 'central limit'. A 'bell-shaped curve' will arise, as shown above.

However, whilst the normal distribution and other mathematical techniques can be useful in financial management, they do not necessarily provide a 'correct answer'. As Mandelbrot and Hudson (2008, p. 41) note, 'unfortunately, the world has not been designed for the convenience of mathematicians'.

 **OVER TO YOU**

Activity 1: The normal distribution and risk

Consider how the normal distribution may not take account of risk in the 'real world'. Why might this be the case? Identify some examples in business of circumstances in which the normal distribution did not prove to be a reliable technique with which to measure risk (it may help to consider examples in which 'unexpected' or 'rare' events occurred and had a major impact on the success, or otherwise, of a business decision).

The impact of different types of risk on financial management processes and activities

Risk refers to the probability that the actual outcome of a decision will differ from the expected outcome. Risk, and the relationship between risk and return, is a key principle in financial management. Businesses need to understand the risks that they face. The range and complexity of the different types of risk and the impact that they could have on business can seem overwhelming. As Watson and Head (2016) note, financial decision making and the management of risk is a complicated and dynamic process.

Thankfully, there are models and techniques that can be used to help to ensure that financial decision making takes account of risk. Techniques are also available to support the management of risk once a decision has been made. A summary of these models and techniques is provided in Table 1.

Financing decisions	Investment decisions	Other financial decisions	Specific risk management techniques
<p>Cost of capital: weighted average cost of capital (WACC) (including the capital asset pricing model and the dividend valuation model)</p>	<p>Investment appraisal: net present value (NPV) and other discounted cash flow (DCF) techniques, internal rate of return (IRR), payback period, accounting rate of return (ARR)</p>	<p>Working capital management: inventories, receivables, payables management (including short-term financing decisions in this context)</p>	<p>Interest rate risk: smoothing, matching, hedging (forward contracts, money markets, futures, options, swaps)</p>

Financing decisions	Investment decisions	Other financial decisions	Specific risk management techniques
Financial gearing: Modigliani and Miller, financial gearing	Portfolio theory: expected values , security investment and risk, capital asset pricing model, arbitrage pricing	Corporate restructuring: takeovers, mergers, divestments	Exchange rate risk: spot and forward rates, matching, netting , leading and lagging , hedging (eurocurrency markets, futures, options, swaps)
Dividend decisions: Modigliani and Miller, traditional school	Perfect and efficient markets: efficient markets hypothesis, behavioural finance	Shareholder value : net present value analysis, shareholder value analysis , economic value added	

Table 1: Models and techniques for the identification and management of financial risk



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You will consider some of these models and techniques in the rest of the study guide. In this unit, we will focus on two approaches that can help to take account of and to manage risk in decisions about the financial structure of a business: financial gearing and **operating gearing**.

! NEED TO KNOW

Risk refers to the probability that the actual outcome of a decision will differ from the expected outcome. Risk, and the relationship between risk and return, is a key principle in financial management. Assuming that individuals are rational, their aim will be to minimise the risks that they face relative to the returns that they expect to receive as a result of a decision. To do this, they need to understand the risks that they face and, if possible and necessary, attempt to manage and control these risks.



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OVER TO YOU

Activity 2: Earnings forecasts and risks

Read the paper by Abrokwa and Nkansah (2014). A reference is provided at the end of the chapter. You can access the journal using the following link:

<https://aabri.com/manuscripts/131777.pdf>

This paper provides evidence on the accuracy of earnings forecasts by companies that have issued shares for trading on the Ghana Stock Exchange. It also examines the bias

in these earnings forecasts and the relationship between accuracy and the characteristics of each company.

Identify and explain the relationships between company age, size, forecast horizon and business risk and the accuracy of earnings forecasts. Explore the evidence that auditor quality has an effect on the accuracy of earnings forecasts.

3.2 Evaluate financial risk using suitable techniques to ensure that financial management decisions take account of financial risks

Financial gearing

Financing decisions can be critical to business success. The mix of debt and equity financing in a business is referred to as its capital or financing structure (Brealey, Myers and Allen, 2014). Decisions on the relative balance of debt and equity finance in a business's financing structure can have significant effects on many aspects of financial performance and financial position. As ever in financial management, the aim is to balance the relationship risk and return. The use of debt as a source of finance can present considerable risks for the business.

Financial gearing occurs as a result of the use of borrowing as a source of finance. As we saw in the previous chapter, financial gearing is calculated using the following formula:

$$\text{Debt} / (\text{Debt} + \text{Equity}) \times 100/1$$



 CASE STUDY

Financial gearing

The following figures have been taken from the most recent statements of financial position of two businesses:

	Business A	Business B
Debt	\$	\$
10% debentures	8,000,000	1,500,000
9% preference shares of \$1	3,000,000	750,000
	11,000,000	2,250,000
Equity		
Ordinary shares of \$1	5,000,000	2,000,000
Share premium	1,100,000	500,000
Revaluation reserve	1,000,000	1,000,000
Profit and loss account	1,900,000	9,250,000
	9,000,000	12,750,000

 OVER TO YOU

Activity 3: Financial gearing

Use the information in the case study above to calculate financial gearing for each of the two businesses. Explain, with reference to the two businesses, why financial gearing is an important measure of risk.

Borrowing (also known as debt) typically results in the need to pay interest (also known as finance costs). This borrowing will need to be serviced via the payment of finance costs (interest payments) and the repayment of capital (the principal amount borrowed).

The need to meet these finance costs can present a number of risks to the business. Assuming that the level of profit remains constant, then the need to meet these finance costs means that there will be less profit to distribute to shareholders in the form of dividends. Alternatively, if the debt finance is used to generate additional profit that exceeds the finance costs, then this will increase the amount of profit that is available to distribute to shareholders in the form of a dividend.

CASE STUDY

Liqui and Meifing's hairdressing business (Part 4)

Let's return to the case study that we considered in Chapters 1 and 2.

Liqui and Meifing's business is a limited company. A local businessman owns 45% of the shares in the company. The rest of the shares are owned by 30 other investors, who include Liqui and Meifing.

Liqui plans to expand operations into mainland China and intends to finance this expansion using a loan from a local bank.

The use of debt financing will increase financial gearing in the business. If the expansion into mainland China generates the level of additional profit that has been forecast by Liqui, then the returns from the use of the debt finance will exceed the finance costs of the borrowing.



OVER TO YOU

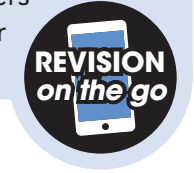
Activity 4: What determines the level of financial gearing? Financial gearing and its importance to shareholders

Think about the local businessman who owns 45% of the business and the other investors in Liqui and Meifing's business. How might they feel about the proposal to finance the expansion to the business using a loan from a local bank? Why might the local businessman and the other investors be particularly interested in Liqui's forecast of the level of additional profit?

Source: Atrill (2014, p. 347)

! NEED TO KNOW

The attitude of the shareholders of a business to the level of financial gearing are likely to be influenced by a number of factors, including control (owners may see debt finance as a way to expand the business without issuing more shares), flexibility (debt finance can be raised more quickly than share capital), capacity (excessive financial gearing can eliminate the capacity for future borrowing), risk and return (risk averse shareholders will only be prepared to take on more risk where there is an opportunity for higher rates of return).



The significance of financial gearing and its importance to organisational activities, processes and performance

The use of debt as a source of finance also exposes the business to other types of risk. Brealey, Myers and Allen (2014) suggest that the most important of these risks is liquidation risk. If the business fails to meet the finance costs or the repayment of principal amount borrowed, then the business assets may have to be given to the lender (this depends on the precise nature of the borrowing agreement). As such, shareholders provide the security for the debt finance that is provided by lenders.

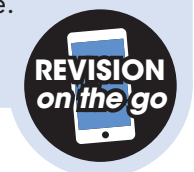
Since borrowing leads to a need to pay finance costs, the use of debt results in exposure to interest rate risk. This is the risk that a business's profits will be adversely affected by changes in interest rates. Variable rate borrowing is usually cheaper and more flexible than fixed rate borrowing. However, if a business uses debt finance that has a variable interest rate, finance charges will increase when interest rates increase. This may put profits and cash flows under distress (Atrill, 2014).

Unlike equity, debt normally has a maturity date (a date on which the principal amount borrowed needs to be repaid). Refinancing risk is the risk that a business will not be able to replace one source of finance with another source of finance. If left unmanaged, the average life of outstanding debt finance will shorten as each day passes. A business must seek to manage the **maturity profile** of its debt by balancing refinancing risk with the cost of debt.

High levels of debt relative to equity and, therefore, a high financial gearing ratio, can be used as an indicator of high levels of these types of risk. We will consider the implications of the use of debt finance and of high levels of financial gearing later in the unit.

! NEED TO KNOW

The use of debt finance gives rise to a number of different risks, including liquidation risk, interest rate risk and refinancing risk. Each of these risks must be balanced with the returns (or lower costs) that can be achieved by the use of particular forms of debt finance. These include the lower cost of borrowing at variable interest rates and when using debt with a short-term maturity.



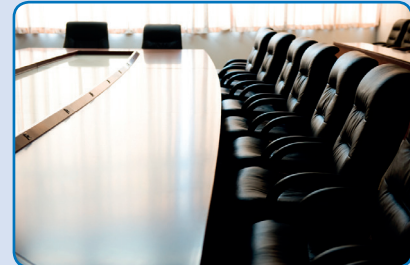
The appropriate use of borrowing can result in improved returns for the business. An established principle in financial management is that the cost of debt is always cheaper than the cost of equity (Majluf and Myers, 1984). Borrowing can be particularly useful when interest rates (also known as

the cost of debt) are low (Brealey, Myers and Allen, 2014). Debt can be a cheap source of finance that can be used to generate substantial returns for the business. Higher gearing makes returns more sensitive to changes in profit: a change in profits for a highly geared business will lead to a proportionately greater change in the return on shareholders' funds.

CASE STUDY

Financial gearing and return on shareholders' funds

The following figures have been taken from the most recent statements of financial position of two businesses:



	Business C	Business D
	\$	\$
Total net assets	20,000,000	15,000,000
Return on net assets	5%	5%
Profit before interest and tax	1,000,000	750,000
Interest on debentures	(960,000)	(180,000)
	40,000	570,000
Preference dividend	(300,000)	(75,000)
Remaining profit for ordinary shareholders	(260,000)	495,000
Funds contributed by ordinary shareholders	9,000,000	10,250,000

OVER TO YOU

Activity 5: Financial gearing and shareholders' funds

Use the information in the case study above to calculate return on shareholders' funds. This can be calculated by dividing the remaining profit for ordinary shareholders by funds contributed by ordinary shareholders.

Now assume that each business achieves a return on net assets of 10%. Assume that all other balances remain the same and recalculate return on shareholders' funds.

Comment on your results in terms of financial gearing, its effects on shareholders' funds and the risks that arise as a result of the use of debt as a source of finance.

! NEED TO KNOW

Higher financial gearing makes returns more sensitive to changes in profit: a change in profits for a business with a high level of financial gearing will lead to a proportionately greater change in the return on shareholders' funds.



Modigliani and Miller (1958) argue that the relative mix of debt and equity in a business's financing structure is unimportant. For Modigliani and Miller (1958) any financing structure is as good as another. Provided that markets are perfect, financing decisions and their effects on financial gearing do not matter, because a business's value is determined by its real assets, not by its financing decisions.

Perfect markets are those that are perfectly competitive. In such markets, there are no barriers of even temporary delays to the formation of perfectly fair prices: so, prices should instantaneously and universally reflect all available and relevant information. Certain conditions are needed to produce perfect markets. These conditions are summarised in Table 2.

Condition	Description
Large number of buyers and sellers	A sufficiently large number of participants exists such that no individual participant or group of participants can manipulate prices
No barriers to entry or exit	Entry to and exit from the market is free. For example, registration or listing fees do not exist
Information	All participants can gain all of the information that they need on which to base their decisions. This information is free and is available instantaneously
No transaction costs	There are no transaction costs such as stamp duties or brokers' commissions. Tax regulations and accounting practices do not affect the relative attractiveness of different investment opportunities. Regulatory constraints do not prevent investors from participating in markets
No effects on market prices	Decisions by prominent investors do not have an impact on market prices

Table 2: Conditions that need to be met in order for a perfect market to exist



Many of these conditions are unrealistic. Most empirical research suggests that it is unlikely that perfect markets do exist (Megginson, 1997). However, businesses do not need markets to be perfect. What they need is for markets to be efficient and to offer fair prices so that they can make sound financing and investment decisions (Watson and Head, 2016). A business should be able to make decisions on, for example, the use of debt finance, and understand the practical effects of changes in financing structure and financial gearing.

! NEED TO KNOW

In perfect markets, prices should instantaneously and universally reflect all available and relevant information. However, the conditions that are needed to produce perfect markets are unrealistic.



Financing decisions (and, therefore, financial gearing) do seem to matter in practice. As we saw in Activity 5, financial gearing can have an effect on return on shareholders' funds. Brealey, Myers and Allen (2014) suggest that the mix of debt and equity finance in a business can be used as a 'starting point' from which to evaluate potential investment opportunities via the calculation of a **cost of capital**. Investment opportunities that are funded using unusually risky financing methods can be reflected in adjustments to the cost of capital.

! NEED TO KNOW

The cost of capital is the rate of return that is required by investors who supply financing to a business. Hence, it is also the minimum rate of return that is required on prospective investment projects. Whilst Modigliani and Miller (1958) argue that the relative mix of debt and equity in a business's financing structure is unimportant, in practice it appears that decisions on the use of different methods of financing do have considerable consequences for many businesses.



OVER TO YOU

Activity 6: Financing structure, financial gearing and entrepreneurs

Read the paper by Milana (2010). A reference is provided at the end of the chapter. You can access the journal using the following link:

<http://documents.tips/documents/rebalancing-the-optimal-financial-structure-the-entrepreneurs-point-of-view.html>

This article provides an account of an interview with an entrepreneur and offers a perspective on the relative balance of debt and equity finance in a business.

Identify and explain the key factors that might need to be considered in the achievement of an appropriate balance of debt and equity finance in a business. Outline the additional factors that might influence this choice for an entrepreneur.

Operating gearing

A business with high fixed costs relative to variable costs is said to have high operating gearing (also known as operating leverage). Such businesses do not proportionately increase expenses as a result of increased revenues and are therefore able to generate increases in operating profit at a faster rate than businesses with lower operating gearing. Operating gearing can be calculated for individual investment opportunities and for businesses as a whole.

Operating gearing is calculated using the following formula:

(Contribution margin % / Net operating income)

Where contribution margin % = (Revenues – Variable costs) / Revenue x 100/1

CASE STUDY

Otobai Company

Otobai Company is a small business that manufactures electrically powered motor scooters. The business plans to launch a new product. It will finance the investment needed to fund the manufacture of this new product using debt finance.

The finance team has prepared the following forecast of cash flows arising from the manufacture and sale of two types of new scooter.



	Scooter A \$	Scooter B \$
Revenue	100,000	120,000
Variable expenses	(30,000)	(36,000)
Fixed expenses	(60,000)	(60,000)
Net operating income	10,000	24,000

Source: Adapted from Brealey, Myers and Allen (2014, p. 243)

OVER TO YOU

Activity 7: Operating gearing

Imagine that you are a financial manager at Otobai Company and use the information in the case study to calculate operating gearing. Calculate operating gearing using both of the formulae that are provided above.

Which of the two new products should Otobai Company choose to manufacture? Comment on your results in terms of operating gearing, the forecast profitability of the two new scooters and on the risk of each of the two investment opportunities.



Operating gearing is a measure of how a growth in revenue translates to a growth in operating income (also known as profit) and, therefore, the risk or volatility of a business's operating income. The higher the contribution margin percentage, the faster the rate at which operating income increases (and decreases) with rising (and declining) revenues.

Empirical evidence suggests that investment opportunities and businesses with high operating gearing are seen as greater investment risks than those with relatively lower operating gearing (Mandelker and Rhee, 1984).

! NEED TO KNOW

Operating gearing is calculated using the following formula:

(Contribution margin % / Net operating income)

Where contribution margin % = $(\text{Revenues} - \text{Variable costs}) / \text{Revenue} \times 100/1$

Empirical evidence suggests that investment opportunities and businesses with high operating gearing are seen as greater investment risks than those with relatively lower operating gearing.



High operating gearing has considerable implications for the preparation of projected financial statements (see Chapter 2), particularly of forecast revenues. A small error in forecast sales can be magnified into large errors in other balances in the projected financial statements.

3.3 Apply approaches to financial management to reduce exposure to financial risks

Evaluation of financial risks using suitable techniques and approaches to financial risk management

As you saw in the previous chapter, various methods can be used to try to deal with the forecasting risks that surround some elements of projected financial statements. These techniques, and others, can be used to evaluate other types of risk. A summary of these techniques can be found in Table 3.

Technique	Description
Sensitivity analysis	Models the effects of a chosen variable. A number of variables may be modelled consecutively. In simple terms, sensitivity analysis can be seen as 'what if?' analysis
Scenario analysis	Allows the effects of a number of variables to be modelled simultaneously
Expected values	A weighted average of a range of possible values, with probabilities used as weights
Simulations	A computer-based form of sensitivity analysis

Table 3: Techniques that could be used to evaluate financial risks

REVISION
on the go

Sensitivity analysis

This technique examines key variables that affect a financial decision to determine how changes in each variable might influence the outcome. Key input values can be varied to pose a series of 'what if?' questions. By considering these 'what if?' questions, managers will have a range of possible outcomes to consider (Atrill, 2014). It is possible to use sensitivity analysis to determine the extent to which a key factor can be changed before a financial decision would change for that reason alone.

CASE STUDY

Road Toll Ltd (Part 1)

(You will return to this case study later in the study guide. Some of the terms in the case study may be unfamiliar at this stage. For now, consider the data in the context of sensitivity analysis.)

Road Toll Ltd has been offered the chance to bid to operate a new toll road that connects mainland India to a nearby island.



The company has undertaken significant analysis of the likely level of demand over the next three years. The company has asked you as the Finance Manager to undertake further investment appraisal of the project to help it create the right kind of bid proposal. The following information is available.

The company has debt which costs 11% and its estimated equity cost of capital is 15%, it is geared 50:50.

The cost of the toll for using the road has been extensively researched and the marketing department has arrived at a fee of \$10 per vehicle, per journey as acceptable to motorists.

The Finance team has estimated that running the toll service will cost \$1,200,000 per annum.

The contract is for three years and the likely acceptable bid price for exclusive rights to operate the toll road is \$1,000,000. All fixtures and fittings required to operate the toll road are included in this price, as is ongoing maintenance of the road and the toll facilities.

The analysis so far has predicted the following demand levels:

Estimated Demand			
Year	1	2	3
Number of journeys	150,000	185,000	350,000

These could vary by as much as 10%, i.e. they could be 10% higher or 10% lower than this estimate.

The company has a hurdle payback period of two years and a company-wide average return on investment of 25%.

So far the company has invested \$100,000 in research and administration.

OVER TO YOU

Activity 8: Sensitivity analysis

Use the data in the case study on estimated demand and the fee rate of \$10 per vehicle, per journey to calculate the revenues that are expected to be generated from the operation of the toll road. Use the data on the variability of estimated demand to develop a sensitivity analysis of forecast revenue.

Remember that you will return to this case study later in the study guide.

Sensitivity analysis offers certain advantages in helping to reduce exposure to financial risk. Atrill (2014) suggests that these advantages include:

- **Margin of safety:** the calculation of a margin of safety for each key factor can help to identify highly sensitive factors that require more detailed information. The collection, reporting and evaluation of information can be costly and time-consuming. The more managers can focus on the critical aspects of a financial decision, the better.
- **Planning:** financial managers can use sensitivity analysis to formulate plans to deal with factors that are highly sensitive.

Disadvantages of sensitivity analysis include:

- **Clarity:** sensitivity analysis does not provide clear decision rules. To some extent, financial managers must still rely on their judgement.
- **Static:** only one factor can be considered at a time whilst the rest of the variables are held constant.

! NEED TO KNOW

Sensitivity analysis offers certain advantages in helping to evaluate the effects of financial risk. These advantages include the calculation of a margin of safety and in financial planning. The disadvantages of sensitivity analysis include a lack of clarity in decision rules and the static nature of the technique: only one factor can be considered at a time whilst the rest of the variables are held constant.



Scenario analysis

Unlike sensitivity analysis, scenario analysis allows the effects of a number of variables to be modelled simultaneously. A number of scenarios can be developed; typically, 'best case' and 'worse case' scenarios are modelled. Scenario analysis does not identify the likelihood of the occurrence of each of the cases.

Expected values

Statistical probabilities can be assigned to a range of values. Using this information, an expected value can be calculated and represents a weighted average of the possible outcomes with the probabilities used as weights.

📄 CASE STUDY

Patel Properties Ltd

(You will return to this case study later in the study guide. Some of the terms in the case study may be unfamiliar at this stage. For now, consider the data in the context of expected values.)

Patel Properties Ltd has the opportunity to acquire a lease on a block of flats that has only two years remaining before it expires.

There is a large naval base nearby. The flats are let almost exclusively to personnel who work at the naval base. There is little other demand for the flats. The navy is considering three options for the naval base:

- 1 Increase the base by closing other bases and transferring the personnel to the base that is located near the flats.
- 2 Close down the naval base near to the flats. Personnel would be moved to a base in another region.
- 3 Leave the naval base open but reduce staffing levels by 20%.



The directors of Patel Properties Ltd have estimated the following net cash flows for each of the two years under each option and the probability of their occurrence:

	\$	Probability
Option 1	800,000	0.6
Option 2	150,000	0.1
Option 3	400,000	0.3
		1.0

The business has a cost of capital of 10%.

Source: Atrill (2014, p. 197)

OVER TO YOU

Activity 9: Expected values

Use the data in the Patel Properties Ltd Case Study on net cash flows and probability to calculate expected values for each of the options.

Remember that you will return to this case study later in the study guide.

Objective probabilities can be determined based on past experience. Historical data can be a reliable basis for the assigning of a probability to a value. However, past experience may not always be a reliable guide to the future (Atrill, 2014). Subjective probabilities are based on opinion and can be useful where historic data is unavailable.

NEED TO KNOW

Expected values can be a useful risk management technique. They rely on the assignment of probabilities to values in order to calculate a weighted average of the possible outcomes with the probabilities used as weights. Objective probabilities or subjective probabilities can be used in the calculation of expected values.



Simulations

Simulations are a form of computer-based sensitivity analysis. A range of possible values for key variables are identified and a probability of occurrence is assigned to each. One of these possible values is selected on a random basis and outcomes are then calculated. This process is repeated using other values for each variable until all the possible combinations of values for key variables have been considered. In practice, thousands of calculations will be carried out (Atrill, 2014).

The use of simulations offers two key advantages:

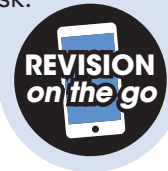
- 1 **Understanding:** the process of modelling can help managers to understand its nature and the key issues in the decision.
- 2 **Risk measurement:** the distribution of outcomes can help to assess the risk of a decision.

Disadvantages of simulations include:

- **Complexity:** designing and producing a simulation model can be time consuming. The greater the complexity of a decision, the greater the complexity of identifying key variables and probabilities.
- **Mechanical approach:** simulations can lead to an over reliance on a quantitative approach to financial decision making.

! NEED TO KNOW

Simulations are a form of computer-based sensitivity analysis. Understanding and risk measurement are the key benefits of the use of this approach to the evaluation of risk. Complexity and a mechanical approach to decision making are the key disadvantages of simulations.



OVER TO YOU

Activity 10: Risk taking and its effects

Read the paper by Tarrof and Majeske (2013). A reference is provided at the end of the chapter. You can access the journal using the following link:

<https://aabri.com/manuscripts/131544.pdf>

This paper studies the relationship between risk taking and other factors, and the financial performance of bank holding companies during the 2008 financial crisis.

Critically discuss the relationship between risk taking and financial performance. Explain the effects that risk taking appears to have on the financial performance of banks and, more generally, in the financial crisis.

READING LIST

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Chapter 4

Sources of Finance

Introduction

Businesses need finance in order to make investments and generate profits. In this chapter, you will consider the main sources of finance and their characteristics.

Fundamental to this chapter is the concept of the cost of capital and the calculation of the weighted average cost of capital. You will consider the role of the **capital markets** in financing decisions and the role and characteristics of different sources of finance. As part of this topic, you will examine the efficient markets hypothesis and its importance.

You will consider how to measure the market value of a business's share capital and the different ways in which share capital can be issued. Finally, you will also address how to evaluate sources of finance to ensure that financing decisions best meet the needs of the business.

Note that businesses can take many different legal forms. Most of what is considered in this chapter relates to limited companies.

Learning outcome

On completing the chapter, you will be able to:

- 4 Evaluate options for the financing of business activities, including the characteristics of different sources of finance and how best to meet the financing needs of the business

Assessment criteria

- 4 Evaluate options for the financing of business activities, including the characteristics of different sources of finance and how best to meet the financing needs of the business
 - 4.1 Assess the role of capital markets and the efficient markets hypothesis in order to understand the effects of financing decisions on the business
 - 4.2 Analyse the role and characteristics of different sources of finance in order to identify suitable sources of finance that best meet the financing needs of a business
 - 4.3 Evaluate sources of finance in order to decide how best to meet the financing needs of the business

Level 5 Effective Financial Management

4.1 Assess the role of capital markets and the efficient markets hypothesis to understand the effects of financing decisions on the business

The nature, role and purpose of the equity and debt markets

As discussed in Chapter 1, a business can be viewed as an investment agency. Its role is to acquire (or 'raise') finance and then to spend (or 'invest') that finance to generate a profit. This profit could then be reinvested in the business in order to generate more profit. Some or all of the profit could be returned to shareholders in the form of dividends.

The way in which finance is raised can have huge implications for a business. Essentially, a business has two options: finance can be raised in the form of equity or in the form of debt. This distinction applies irrespective of the size of the business. Note that the precise mechanisms by which finance is raised often vary depending on the size of the business. For example, smaller businesses are more reliant on mechanisms such as venture capital and crowdfunding. Definitions and examples of equity and debt finance are provided in Table 1:

Type of finance	Description	Examples
Equity	<p>The 'ownership interest' in a business – people with such an interest are investors (also known as shareholders).</p> <p>Generally regarded as permanent capital in a company, i.e. there are no repayments, although in some circumstances equity can be purchased back.</p> <p>Usually there is no commitment that investors (shareholders) will make any regular return, although the board of the company might decide to pay a dividend.</p> <p>Generally unsecured.</p>	<p>A company's equity is made up of shares (usually ordinary shares but there are other classes), retained earnings, revaluation reserves, and other reserves</p>

Type of finance	Description	Examples
Debt	<p>Sometimes referred to as 'borrowing'. A common feature of this type of finance is the finance charge or 'interest' that is applied.</p> <p>There are generally regular repayments made to the lender resulting in the debt reducing in time (ultimately fully repaid over an agreed period).</p> <p>The lender may require security from the borrower.</p>	Overdraft, loans, debentures

Table 1: Types of finance



! NEED TO KNOW

Essentially, a business can raise up to two different types of finance: equity and debt.



OVER TO YOU

Activity 1: Equity and debt

The distinction between equity and debt as types of finance is usually clear. However, there are some sources of finance that have characteristics that make the distinction difficult.

Consider the following sources of finance and classify each as either equity or debt:

loans

ordinary shares

retained earnings

debentures

share premium reserve

bank overdraft

loan notes

finance leases

preference shares.

The mix of equity and debt financing together represents a business's **financial structure**. Any imbalance will lead to inefficiency: remember that the aim of the business is to raise and invest finance in order to make a profit. If a business's financial structure is not 'correct', profits will be lower than they would otherwise be.

Hence, the cost to a business of raising finance is referred to as the **cost of capital**. Brealey, Myers and Allen (2014, p. 28) define the cost of capital as:

“ *The expected return on a portfolio of all the company's existing securities. It is the opportunity cost of capital for investment in the business's assets, and therefore the appropriate discount rate for the business's average-risk projects.* ”

! NEED TO KNOW

The mix of equity and debt financing in a business makes up its financial structure. Any imbalance in this financial structure will cause profits to be lower than they would otherwise be. The cost to a business of raising finance is referred to as its cost of capital.



Efficient markets hypothesis

The role of equity and debt markets is much the same as markets for other goods and services: buyers and sellers are brought together in order to exchange things of value. Financial markets can be notoriously unstable and are not perfect (look back to Chapter 3 for a discussion of perfect markets). The **efficient markets hypothesis (EMH)** reflects the idea that financial markets, whilst not being perfect, are at least efficient.

Fama's (1965) seminal paper defines an efficient market as:

“ *A market where there are large numbers of rational profit 'maximisers' actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants.* ”

Competition amongst rational and intelligent profit maximisers promotes market efficiency. Market prices reflect the effects of information that is based on past events and events that are expected to occur in the future. So, market prices are held to be a good representation of intrinsic value.

! NEED TO KNOW

The efficient markets hypothesis (EMH) reflects the idea that financial markets, whilst not being perfect, are at least efficient. An efficient market is one in which competition amongst rational and intelligent profit maximisers promotes market efficiency.



Fama (1965) considered that there are three levels at which financial markets can be efficient. These different levels are summarised in Table 2:

Form	Description
Strong-form efficiency	A market is strong-form efficient if all information that is relevant to market price (be it publicly available or privately available) is accurately reflected in that market price.
Semi-strong-form efficiency	A market is semi-strong-form efficient if relevant publicly available information is quickly reflected in the market price. Financial markets are considered to react to the new information. Market prices move to their new equilibrium level following the emergence of that information.
Weak-form efficiency	In a market that is weak-form efficient, market prices are considered to move due to historical information about market price. All items of information are presumed to be unrelated: hence, random walk theory applies.

Table 2: Levels of market efficiency



The methods by which share capital can be issued

How can the market value of equity be measured?

The market value of a share is determined by supply and demand – the willingness of participants in a market to buy and sell shares. In theory, the value of a share **should** be equal to the sum of the expected future price of the share and present value (PV) of the expected dividends from that share.

OVER TO YOU

Activity 2: The market value of equity

Suppose an investor plans to hold a share of Tavares Plc (Chapter 2, Case Study, p. 31) for a year. The expected cash flows include the next period's dividend (D_1) and the expected market price of the share at the end of the year (P_1). If the required rate of return is r , the current market price of this share (P_0) is:

$$P_0 = \frac{D_1}{(1+r)} + \frac{P_1}{(1+r)}$$

From equation (1), the current market price of a share (P_0) is the present value (PV) of the expected future cash flows. By the same analogy, P_1 should be the PV of the dividend at the end of period 2 (D_2) and the market price of the share at the end of period 2 (P_2). This could be written as:

$$P_1 = \frac{D_2}{(1+r)} + \frac{P_2}{(1+r)}$$

By combining equations (1) and (2), we get:

$$P_0 = \frac{D_1}{(1+r)} + \frac{D_2}{(1+r)^2} + \frac{P_2}{(1+r)^2}$$

Now try to answer the following questions:

- 1 True or false?
 - a All stocks in an equivalent risk class are priced to offer the same expected rate of return.
 - b The value of a share equals the present value of future dividends per share.
- 2 Company X is expected to pay an end-of-year dividend of \$5 a share. After the dividend, its stock is expected to sell at \$110. If the market capitalisation rate is 8%, what is the current stock price?
- 3 True or false?
 - a The value of a share equals the discounted stream of future earnings per share.
 - b The value of a share equals the present value of earnings per share, assuming that the business does not grow, plus the net present value of future growth opportunities.

Source: Brealey, Myers and Allen (2014)

Initial public offering

The process of selling shares to the public for the first time is called an **initial public offering (IPO)**. IPOs can take a number of different forms, including:

- primary offerings: new shares are sold to raise additional cash for the business
- secondary offerings: often confined to small, less-established business

IPOs offer both advantages and disadvantages. A summary of each is provided in Table 3:

Advantages	Disadvantages
Access: IPOs provide access to a much greater amount of equity finance	Dilution of control: shareholders of a business become more widely dispersed
Performance: provide a 'yardstick' measure with which to evaluate performance	Agency problem: direct monitoring and supervision of managers becomes more difficult
Diversification: greater diversification of sources of finance	Administrative costs: additional regulatory and administrative costs
Reduced costs: potentially reduces the cost of borrowing	

Table 3: Advantages and disadvantages of initial public offerings



In some cultures, IPOs are very rare. For example, Italy has only 10% listed companies compared to that of the UK (Brealey, Myers and Allen 2014).

! NEED TO KNOW

Initial public offerings (IPOs) have both advantages and disadvantages. Advantages include access, performance, diversification and reduced costs. Disadvantages include dilution of control, agency problems and administrative costs.



Investment banks and professional advisors are the key to the IPO process. The latter are referred to by Brealey, Myers and Allen (2014) as the 'financial midwives' or underwriters for an IPO. They buy the shares and then sell them to the public.

The IPO process typically involves some or all of the following stages outlined in Table 4:

Stage	Description
Investment bank	An investment bank is selected as a professional advisor and underwriter
Due diligence	An investigation by the investment bank is carried out and the business produces the information required to satisfy appropriate regulatory authorities
Pre-marketing	Briefing documents are distributed to institutional investors in order to introduce the company
Underwriting	An underwriting syndicate is formed by the investment bank to underwrite the issue

Stage	Description
Initial prospectus	An initial prospectus is produced, which includes an initial price range based on the investment bank's analysis and the feedback from pre-marketing. Note that some techniques for taking the business public involve fixing the price in the due diligence phase, so there is no initial prospectus
Pricing/allocation	If the price has already been fixed, only the allocation remains to be done

Table 4: Stages in the IPO process

REVISION
on the go

OVER TO YOU

Activity 3: Initial public offerings

Read the paper by Smith (2013). A reference is provided at the end of the chapter. You can access the journal using the following link:

<https://aabri.com/manuscripts/121367.pdf>

This paper examines alternative methods of abnormal performance detection and applies the most powerful method to examine the price performance of IPOs. This application is used to determine if IPOs generate abnormal performance.

Critically evaluate the evidence that IPOs generated abnormal performance.

Seasoned equity offerings

A business's need for equity rarely ends at the IPO. Profitable investment opportunities occur throughout the life of the business. In some cases, it will not be feasible for these investment opportunities to be financed using other sources of finance. As a result, businesses return to equity markets and offer new shares for sale, a type of offering called a seasoned equity offering (SEO) (also known as a security sale).

There are two kinds of SEOs:

- 1 Cash offers:** the business offers new shares to investors at large.
- 2 Rights offers:** the business offers new shares to existing shareholders only.

When a business issues shares using an SEO, it follows many of the same steps as for an IPO. The main difference is that a market price for the shares already exists. This means that the price-setting process is not necessary.

! NEED TO KNOW

A seasoned equity offering (SEO) can be used to raise additional equity finance following an initial public offering (IPO). The key difference between and SEO and an IPO is that, in an SEO, a market price for the shares already exists.



Research has shown that, on average, the equity markets greet the news of an SEO with a decline in the market price of a business's shares. Often, the value destroyed by the price decline can be a significant fraction of the new finance raised. A business that is concerned with protecting its existing shareholders will tend to sell new shares at a price that correctly values or overvalues the business, investors infer from the decision to sell that the company is likely to be overvalued; hence, the market price drops with the SEO announcement.

! NEED TO KNOW

SEOs often lead to a reduction in the market price of a business's shares. Equity markets tend to interpret SEOs as a sign that a business's shares are overvalued and so the market price of those shares falls with the announcement of an SEO.



Rights issues are a form of SEO which involves the offer of new shares, for cash, to existing investors only. To encourage existing investors to take up a rights offer, a price is set that is usually below the current market price. The number of shares that an existing investor has the 'right' to take up will depend on the number of shares owned by that investor prior to the SEO.

OVER TO YOU

Activity 4: Rights issues

Baker Holdings plc has 20 million ordinary shares of 50p in issue. These shares are currently valued on the London Stock Exchange at £1.60 per share. The directors of Baker Holdings plc believe that the business requires additional long-term capital and have decided to make a one-for-four rights issue (that is, one new share for every four shares held) at £1.30 per share. What is the value of the rights per new share?

Market forces will usually ensure that the actual price of rights and the theoretical price will be fairly close. Rights issues are a popular approach to the raising of equity finance. McLaney (2014) reports that between 2001 and 2010, rights issues averaged 45% of total SEOs.

4.2 Analyse the role and characteristics of different sources of finance to identify suitable sources of finance that best meet the financing needs of a business

The weighted average cost of capital

The concept of the cost of capital was introduced earlier in the context of a business's financial structure. The traditional perception of the cost of capital is that it is something that is determined by the relative mix and cost of equity and debt financing in a business (McLaney 2014). The cost of capital also provides a 'benchmark' or 'threshold' against which investment opportunities (that will use the finance raised in order to generate profit) can be appraised.

! NEED TO KNOW

The cost of capital provides a 'benchmark' or 'threshold' against which investment opportunities (that will use the finance raised in order to generate profit) can be appraised.



Most businesses use both of the two types of finance (McLaney 2014). This means that their financial structure is a 'blend' of equity and debt. The costs of the individual sources of finance are weighted according to their relative importance as sources of finance. This approach to the calculation of the cost of capital is known as the **weighted average cost of capital (WACC)** (pronounced 'whack').

! NEED TO KNOW

The weighted average cost of capital reflects the costs of the individual sources of finance, which are weighted according to their relative importance as sources of finance.



Equity finance, preference shares, medium and long-term debt, and leasing should be included. Generally speaking, we don't usually consider current liabilities (e.g. short-term trade creditors) when calculating WACC.

The formula for the calculation of the WACC is:

$$R = \left(\frac{E}{E + D} \right) rE + \left(\frac{D}{E + D} \right) rD (1 - rC)$$

Where:

rE = Cost of equity

rD = Cost of debt (after tax)

E = Market value of equity

D = Market value of debt

rC = Corporate tax rate

! NEED TO KNOW

The formula for the calculation of the WACC is:

$$R = \left(\frac{E}{E + D} \right) rE + \left(\frac{D}{E + D} \right) rD (1 - rC)$$

(Note: you will be provided with this formula in the examination.)



📄 CASE STUDY

Whitley plc

Consider that Whitley plc is financed by a combination of debt and equity. The book value of equity is \$3.5 million and it has 1.5 million shares outstanding. The shares are traded at \$4 each. The rate of return demanded by its shareholders on equity is 12%. The value of Whitley plc's outstanding debt is \$2 million and the cost of debt is 8%. There is no corporate tax.



✎ OVER TO YOU

Activity 5: Weighted average cost of capital

Using information from the case study above, calculate the weighted average cost of capital for Whitley plc.

(Tip: use the formula for WACC provided.)

Evidence provided by McLaney, Pointon, Thomas and Tucker (2004) indicates that 53% of UK businesses use this approach to estimate their cost of capital. The WACC is a popular approach to the calculation of the cost of capital. However, it is not perfect and has been subject to criticism. These criticisms are summarised in Table 5.

Criticism	Description
Assumption that debt is cheaper than equity	Higher proportions of debt will, in fact, lead to increasingly expensive equity: as equity investors seek greater protection from the increased risks that arise from high levels of debt
Cost of equity	Estimation of the cost of equity can be difficult. Methods such as the Capital Asset Pricing Model (CAPM) and Dividend Valuation Model (DVM) are not perfect methods for the calculation of the cost of equity
Time-lag	WACC is based on a business's current characteristics: an investment decision is based on future cash flows
High risk	The 'true' cost of capital depends on the purpose to which finance is applied: strict reliance on the WACC could lead to the acceptance of too many high-risk projects and rejection of too many low-risk projects

Table 5: Criticisms of the weighted average cost of capital



! NEED TO KNOW

The WACC is a popular approach to the calculation of the cost of capital. However, it is not perfect and has been subject to criticism. These criticisms include the assumption that debt is cheaper than equity, difficulties in the calculation of the cost of equity, time-lag and high levels of risk.



📄 CASE STUDY

Road Toll Ltd (Part 2)

Let's return to a case study that we considered earlier in the study guide (Chapter 3, Case Study, p. 58). This time, our focus is on the calculation of the weighted average costs of capital. (You will return to this case study later in the study guide. Some of the terms in the case study may be unfamiliar at this stage. For now, consider the data in the context of sensitivity analysis.)



Road Toll Ltd has been offered the chance to bid to operate a new toll road that connects mainland India to a nearby island.

The company has undertaken significant analysis of the likely level of demand over the next three years. The company has asked you as the Finance Manager to undertake further investment appraisal of the project to help it create the right kind of bid proposal. The following information is available:

The company has debt which costs 11% and its estimated equity cost of capital is 15%, it is geared 50:50.

The cost of the toll for using the road has been extensively researched and the marketing department has arrived at a fee of \$10 per vehicle, per journey as acceptable to motorists.

The Finance team has estimated that running the toll service will cost \$1,200,000 per annum.

The contract is for three years and the likely acceptable bid price for exclusive rights to operate the toll road is \$1,000,000. All fixtures and fittings required to operate the toll road are included in this price, as is ongoing maintenance of the road and the toll facilities.

The analysis so far has predicted the following demand levels:

Estimated Demand			
Year	1	2	3
Number of journeys	150,000	185,000	350,000

Demand could vary by as much as 10%; they could be 10% higher or 10% lower than this estimate.

The company has a hurdle payback period of two years, a company-wide average return on investment of 25%.

So far the company has invested \$100,000 in research and administration.

OVER TO YOU

Activity 6: Weighted average cost of capital

Use the data in the case study on debt and equity financing to calculate the weighted average cost of capital for Road Toll Ltd.

(Tip: look back to earlier in the study guide and remind yourself of the meaning of financial gearing.)

Internal and external sources of finance

You have already considered the role of share capital as a source of finance for a business. Share capital is an external source of finance: it requires the agreement of potential shareholders (who agree to purchase the shares) in order to raise finance. Internal sources of finance, in contrast, arise from decisions that do not require agreement from other parties beyond the directors of the business (Atrill, 2014).

We can also categorise both internal and external sources of finance as either long-term or short-term in nature. Generally, long-term sources are expected to provide finance for at least one year.

! NEED TO KNOW

External sources of finance require the agreement of parties outside of the business in order to raise the finance. Internal sources of finance arise from decisions that do not require agreement from other parties beyond the directors of the business.



Retained profit (internal; long-term)

Retained profit is a type of equity finance. The retention of profit (rather than distribution in the form of dividends) is, in effect, a way to raise finance (McLaney 2014). Unlike share capital, retained profit is an internal source of finance: its use does not depend on agreement from parties other than the directors of the business. Typically, it is long-term in nature.

McLaney (2014) reports that retained profit has represented about half of all the long-term finance raised by UK businesses in recent years (McLaney 2014). Despite the popularity of the use of retained profit, a number of important factors need to be considered before it is used. These issues are summarised in Table 6:

Factor	Description
Dividend policy	The retention of profit and its subsequent use as a source of equity finance will have an effect on the dividends paid. Some suggest that this will reduce the net wealth of investors
Issue costs	Other approaches to the raising of equity finance, such as IPOs, have issue costs. Retained profit has no issue cost so can be attractive for this reason
Risk	There is no guarantee that additional retained profits will be generated in the future
Dilution of control	The use of retained profits does not affect the voting strength of investors

Table 6: Factors to consider in the use of retained profit as finance



✎ OVER TO YOU

Activity 7: Retained profit

Are retained profits a 'free' source of finance? How might shareholders feel if a business consistently uses retained profit as a source of finance, rather than distributing to shareholders in the form of a dividend?

Working capital (internal; short-term)

This is another internal source of finance. Four principal elements comprise working capital: inventories, receivables, cash and payables. Effective management and control of these elements can provide opportunities to generate and 'drive out' sources of finance that can be used to support a business's activities.

McLaney (2014) notes that the effective management of working capital is linked to longer-term financing decisions. The amount of working capital that needs to be held across time, the timing of cash flows and the level of risk involved all need to be considered when reflecting on the importance of working capital and financing.



OVER TO YOU

Activity 8: Working capital

In some industries, current assets such as inventories, receivables and cash can constitute a significant proportion of the total asset base. The appropriate management of payables can also be critical, particularly for those businesses that purchase goods and services on a credit basis.

In which industries might working capital represent a significant proportion of a business's asset base?



NEED TO KNOW

Working capital comprises inventories, receivables, cash and payable. Effective management of working capital is linked to longer-term financing decisions. Timing of cash flows and levels of risk are important when considering the amount of working capital that might be available as a source of finance.



The level of inventories held by a business will vary according to a number of factors, including the industry in which the business operates. Businesses are not obliged to hold inventories. The level of inventories held will be informed by a number of factors. These factors are summarised in Table 7.

Factor	Description
Trade-off	Optimal inventory levels involve a trade-off between carrying costs and order costs
Carrying costs	Carrying costs include the cost of storing goods as well as the cost of capital tied up in inventor
Frequency of orders	A business can manage its inventories by waiting until they reach some minimum level and then replenish them by ordering a predetermined quantity. When carrying costs are high and order costs are low, it makes sense to place more frequent orders and maintain higher levels of inventory
Non-linearity	Inventory levels do not rise in direct proportion to sales. As sales increase, the optimal inventory level rises, but less than proportionately

Table 7: Factors in the determination of inventory levels



Cash is another important element of working capital. The amount of cash held by a business needs to be considered with great care: the marginal value of holding, such as a liquid asset as a cash balance, declines as the amount of cash held increases.

OVER TO YOU

Activity 9: Cash

Identify and discuss the costs of holding:

- 1 too little cash
- 2 too much cash.

NEED TO KNOW

The marginal value of holding cash declines as the amount of cash held increases. The costs of holding too little cash include a failure to meet payables and other obligations when they fall due. The costs of holding too much cash include the opportunity cost of failing to use cash to finance profitable investment opportunities.



Debt financing (external; usually long-term)

There are many other sources of debt finance. In this part of the chapter, we will consider some of the most popular types of debt financing.

Loans are a major source of debt finance for many businesses. This form of debt financing is an external source of finance. Loans can be both short term and long term in nature.

Lenders invest in businesses via a contract that will typically specify interest rates, dates of interest payments, capital repayments and the security for the amount lent to the business. To protect themselves against the non-repayment of interest and capital amounts, lenders seek some form of security for their investment (Atrill 2014).

The cost of this type of debt financing will typically comprise the elements that are outlined in Table 8:

Element	Description
Finance costs (interest charges)	The cost of borrowing and a reflection of the level of risk that the lender perceives to arise as a result of their investment in the business
Security charges	The means by which lenders establish some form of security on their investment. The charge may be fixed on particular assets of the business or 'floating' on the whole asset base of the business
Fees	Arrangement and administrative fees may also be incurred as a result of borrowing

Table 8: Elements in the cost of debt financing



! NEED TO KNOW

There are many types of debt finance. The cost of debt includes finance costs (interest charges, security charges and fees).



Long-term loans are available from banks and other financial institutions. Fixed and floating (also known as variable) rates of interest can be applied to these loans. These finance costs (interest charges) reflect the perceived risk of the borrowing business. The greater the risk that is perceived by a bank or financial institution, the higher the interest rate.

Payments on long-term loans will include both principal (also known as capital) and interest elements. The annual repayment amount on a loan can be found by dividing the amount of the loan by the cumulative present value (also known as the annuity) factor at the relevant rate of interest.

CASE STUDY

Liqui and Meifing's hairdressing business (Part 5)

Let's return to the case study that we considered in chapters 1, 2 and 3.

Liqui and Meifing's business is a limited company. A local businessman owns 45% of the shares in the company. The rest of the shares are owned by 30 other investors, who include Liqui and Meifing.

Remember that Liqui plans to expand operations into mainland China. Liqui intends to finance this expansion using a loan from a local bank.

Consider that Liqui plans to use a \$100,000 bank loan at an interest rate of 10% per year. The loan is repayable in equal annual instalments over five years.



OVER TO YOU

Activity 10: Annual repayment amounts on a long-term loan

Calculate the annual repayment amount on Liqui's loan detailed in the case study above. Remember that this can be found by dividing the amount of the loan by the cumulative present value factor at the relevant rate of interest.

(Note: in the examination, you will be provided with information that will allow you to identify the cumulative present value factor.)

Source: Watson and Head (2016, p. 147)

NEED TO KNOW

The annual repayment amount on a long-term loan can be found by dividing the amount of the loan by the cumulative present value (also known as the annuity) factor at the relevant rate of interest.



The key features, advantages and disadvantages of the main types of debt finance are summarised in Table 9.

Type	Key features	Advantages	Disadvantages
Subordinated loans	Ranked below other types of borrowing: interest payments and capital repayments on other borrowing are paid in priority to subordinated loans. Sometimes referred to as 'junior debt'	Loan covenants on other types of loan often ignore subordinated loans, as they pose no threat to their claims: so, subordinated loans can be a source of borrowing when other sources are not available	Normally incur higher interest charges due to higher risks to lenders
Term loans	Tailored to meet the specific needs of borrowers	Terms are open to negotiation and agreement. Flexible and often cheap	Restricted availability
Loan notes	Divided into units and offered for sale to investors. Often traded on a stock exchange	Can be attractive to investors	Market value may fluctuate
Mortgages	Secured on an asset	Often long term	Lack of flexibility

Source: adapted from Atrill (2014)

Table 9: The key advantages and disadvantages of the main types of debt



Bonds (external; long-term)

Many firms raise finance via issuing securities that bear a fixed interest rate that is payable on the face value of those securities (McLaney 2014). These securities include loan notes, debentures and **bonds**.

A bond is an evidence of debt issued by a business or a government body (government bonds are sometimes referred to as 'gilts'). A bond represents a loan made by investors to the issuer. In return for this investment, the investor receives a legal claim on the future cash flows of the borrower. The issuer promises to:

- make regular coupon payments (interest payments) every period until the bond matures
- pay the face/par/maturity value of the bond when it matures (i.e. when the bond becomes due for repayment).

The nominal yield or coupon rate is the rate of interest on the face value of the bond. This is not necessarily the same as the market rate of interest. The current yield is the nominal interest payment divided by the current market price.

! NEED TO KNOW

Bonds are a form of debt finance and represent a loan made by investors to the issuer. The nominal rate of interest is the rate of interest on the face value of the bond. This is not necessarily the same as the market rate of interest. The current yield is the nominal interest payment divided by the current market price.



Redeemable bonds (i.e. bonds for which the principal amount needs to be repaid when the bond matures) can be valued by discounting the future interest payments and the future redemption value by the debt holders' required rate of return. Interest payments are usually made on an annual or semi-annual basis. The formula for the valuation of a redeemable bond is:

$$P_0 = \left(\frac{I}{(1 + K_d)} \right) + \left(\frac{I}{(1 + K_d)^2} \right) + \left(\frac{I}{(1 + K_d)^3} \right) + \left(\frac{I + RV}{(1 + K_d)^n} \right)$$

Where:

P_0 = ex-market rate of interest

I = interest paid (\$)

K_d = rate of return required by debt investors (%)

RV = redemption value (\$)

n = time to maturity (years)

! NEED TO KNOW

The formula for the calculation of the value of a redeemable bond is:

$$P_0 = \left(\frac{I}{(1 + K_d)} \right) + \left(\frac{I}{(1 + K_d)^2} \right) + \left(\frac{I}{(1 + K_d)^3} \right) + \dots + \left(\frac{I + RV}{(1 + K_d)^n} \right)$$

(Note: you will be provided with this formula in the examination.)



OVER TO YOU

Activity 11: Bond valuation

Consider a bond that pays annual interest of 10% and that is redeemable at a nominal value of £100 in four years' time. Assume that investors in this bond require an annual rate of return of 12%.

Calculate the value on the bond.

Source: Watson and Head (2016, p. 155)



The world's debt markets provide the basis for the issue and trading of many types of bonds. Typically, these bonds have terms (also known as 'maturities') of up to 10 years but can have much shorter or longer terms.

The need to meet these finance costs can present a number of risks to the business. Assuming that the level of profit remains constant, then the need to meet these finance costs means that there will be less profit to distribute to shareholders in the form of dividends. Alternatively, if the debt finance is used to generate additional profit that exceeds the finance costs, then this will increase the amount of profit that is available to distribute to shareholders as dividends.

So far in this chapter, we have considered the main sources of finance that are used by many businesses. Note that there are a number of other sources of finance. Briefly, some of these are:

- invoice discounting: using a business's unpaid accounts receivables as collateral for debt finance;
- invoice factoring: the sale of a business's accounts receivables to a third party at a discount;
- leasing: the provision of an asset to a business in return for rental payments.

4.3 Evaluate sources of finance to decide how best to meet the financing needs of the business

Equity or debt – which is best?

As we saw in the previous chapter, the use of debt as a source of finance is not without its risks. Nevertheless, if debt finance is used to generate additional profit that exceeds the cost of debt, then this will increase the amount of profit that is available to distribute to shareholders in the form of a dividend. Research by, for example, Dimson, Marsh and Staunton (2011) suggests that debt finance is cheaper than equity finance, at least in the short-term.

! NEED TO KNOW

Debt is a very popular source of finance for many businesses. Research suggests that this is because it is cheaper than equity finance, at least in the short-term.



Finance costs (also known as 'interest charges') create **tax shields**. These tax shields protect profits from corporate tax. This is one of the reasons why debt finance is often cheaper than equity finance. Tax shields are calculated as the present value of future tax savings arising from the use of debt finance (Watson and Head, 2016).

CASE STUDY

Liqui and Meifing's hairdressing business (Part 6)

Let's return again to the case study on Liqui and Meifing's hairdressing business that we considered earlier in this chapter and also in chapters 1, 2 and 3.

Remember that Liqui plans to expand operations into mainland China and intends to finance this expansion using a loan from a local bank.

Consider that Liqui plans to use a \$100,000 bank loan at an interest rate of 10% per year. The loan is repayable in equal annual instalments over five years.

Now consider that, instead of the bank loan, Liqui plans to raise \$100,000 by issuing new share capital in the form of a rights issue.

Assume that the annual earnings before interest and tax of Liqui's business are expected to be \$200,000.



OVER TO YOU

Activity 12: Tax shields

Calculate the tax shield that will be created if Liqui decides to finance the investment in expanding the business operations using the bank loan, rather than the rights issue.

Source: Brealey, Myers and Allen (2014, p. 441)

The matching principle of finance and its importance

The **matching principle of finance** states that short-term investment needs should be financed with short-term sources of finance. Long-term investment needs should be financed with long-term sources of finance. So, there is a need to consider the purpose to which finance is to be applied: this should then be paired with a source of finance that 'matches' with the duration of the investment.

A business's investment in non-current assets (e.g. property, machinery, vehicles) should be financed by long-term sources of finance. Current assets that fluctuate (e.g. inventories, trade receivables) should be financed using short-term sources of finance.

! NEED TO KNOW

The matching principle of finance means that short-term investment needs should be financed with short-term sources of finance. Long-term investment needs should be financed with long-term sources of finance.



The matching principle is an important idea in financial management. Other factors that need to be considered when selecting a source of finance are outlined in Table 10.

Factor	Description
Cost	Different sources of finance have different cost implications for a business
Availability/accessibility	Some sources of finance may not be available/accessible due to factors such as the characteristics of the business or restrictions in the market
Flexibility	Short-term sources of finance can offer greater flexibility than long-term sources
Refinancing risk	Short-term sources of finance have to be renewed more frequently than long-term sources. This can be problematic for businesses that are in financial difficulties or if there is a shortage of finance overall in the market
Taxation	Some sources of finance offer relative tax advantages in some tax jurisdictions
Interest rates	Fluctuating interest rates can cause problems when a business uses debt as a source of finance. This can be a particular problem when combined with the need to re-finance debt
Control	Some sources of finance require the handover of aspects of control over the business

Table 10: Elements in the cost of debt financing



OVER TO YOU

Activity 13: How best to meet the financing needs of the business

Read the paper by Dolar and Yang (2013). A reference is provided at the end of the chapter. You can access the journal using the following link:

<https://aabri.com/manuscripts/121305.pdf>

This paper provides evidence that the consolidation of the banking sector has had a negative impact on the level of lending to small business.

Critically evaluate the effect of the financial crisis on the availability of debt finance to small businesses.

READING LIST

- Atrill, P. (2014) *Financial management for decision makers*. 7th edition. Harlow: Pearson.
- Brealey, R. A., Myers, S. C. & Allen, F. (2014) *Principles of corporate finance*. 11th edition. Maidenhead: McGraw-Hill.
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- McLaney, E. (2014) *Business finance: theory and practice*. 10th edition. Harlow: Pearson.
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Chapter 5

Investment Appraisal

Introduction

Look back to the view of a business that was presented in Chapter 1. Remember that a business can be seen as an investment agency: its role is to raise finance and then to invest that finance to generate a profit. In this chapter, our focus is on how to evaluate investment opportunities to ensure that investment decisions reflect the needs of the business and its financial management strategy.

Investment decision-making techniques can be useful in helping to guide the financial managers of a business to make decisions that are appropriate. A number of techniques exist: we will consider three common techniques. Each of these techniques has both advantages and disadvantages. Irrespective of the choice of technique, there is often a need to take non-financial factors into account when making an investment decision.

Learning outcome

On completing the chapter, you will be able to:

- 5 Evaluate investment opportunities in order to ensure that investment decisions reflect the needs of the business and its financial management strategy**

Assessment criteria

- 5 Evaluate investment opportunities in order to ensure that investment decisions reflect the needs of the business and its financial management strategy**
 - 5.1 Select and justify investment appraisal techniques in order to ensure that investment decisions reflect the financial management strategy of the business
 - 5.2 Compare investment appraisal techniques for a range of typical investment scenarios in order to best meet the needs of the business
 - 5.3 Analyse relevant non-financial factors, including the limitations of investment appraisal techniques, in order to ensure that investment decision making takes account of the broader strategic needs of the business

5.1 Select and justify investment appraisal techniques to ensure that investment decisions reflect the financial management strategy of the business

The nature and characteristics of different investment appraisal techniques

Investments can involve substantial cash flows (both outflows and inflows). Often, the initial investment that is needed to finance the acquisition of an asset that is required to undertake a project can be significant. Inappropriate investments can lead to disaster for the business.

Decision making in this area of financial management can be complex. These decisions are made relatively infrequently and therefore managers in the organisation may have limited experience of them. The effects and consequences of investments can last for many years: many investment opportunities give rise to cash outflows and cash inflows over many years.

CASE STUDY

Liqui and Meifing's hairdressing business (Part 7)

Let's return to the case study that we considered at various points in the study guide.

Liqui and Meifing's business is a limited company. A local businessman owns 45% of the shares in the company. The rest of the shares are owned by 30 other investors, who include Liqui and Meifing.

Liqui plans to expand operations into mainland China and intends to finance this expansion using a loan from a local bank.

Consider that Liqui plans to use a \$100,000 bank loan at an interest rate of 10% per year. The loan is repayable in equal annual instalments over five years.

Now, assume that the loan is secured on the property that is owned by the business. If Liqui does not meet the repayment of finance charges and the principal amount of the loan, the bank has the right to seize the property owned by the business.



As we saw in Chapter 3, the use of debt financing will increase financial gearing in the business. If the expansion into mainland China generates the level of additional profit that has been forecast by Liqui, then the returns from the use of the debt finance will exceed the finance costs of the borrowing.

If insufficient profit is generated by the business, then the repayments of finance charges and principal cannot be made.

OVER TO YOU

Activity 1: The nature and characteristics of different investment appraisal techniques

Think about the nature and characteristics of the investment opportunity for Liqui and Meifing's business. Why does this type of scenario mean that investment appraisal techniques might need to be applied in order to help Liqui (and both the bank and the other investors in the business) to evaluate this opportunity?

A summary of three common investment appraisal techniques is provided in Table 1. You will be given an opportunity to apply these different investment appraisal techniques later in the chapter. For now, reflect on the nature and characteristics of each of the techniques.

Technique	Description	Formula
Payback	Time taken for an initial investment to be recovered out of net cash flows from the project	Net cash flows – initial investment Expressed in time (years and/or months)
Accounting rate of return (ARR)	Relies on identifying the profitability of the investment over its life. A profit-based, rather than cash-based, technique An acceptable project is the project which has an ARR above a pre-determined target	Average annual profit / (Average investment) x 100/1 Where: Average investment = (Initial investment + residual value) / 2

Technique	Description	Formula
Net present value (NPV)	NPV considers all the costs and the revenues of a project and it gives a simple decision rule: if the NPV of a potential investment is positive then accept the project, if it is negative then reject the project	Present value of net cash flows – initial investment

Table 1: Types of finance



For the NPV technique, the present value of net cash flows is calculated as follows:

$$\text{PV of year } n = \frac{\text{actual cash flow of year } n}{(1 + r)^n}$$

Where:

n = the year of the cash flow

r = discount rate (representing the cost of capital)

If an investment generates a positive NPV, then it should be pursued, at least in theory.

! NEED TO KNOW

For the NPV technique, the present value of net cash flows is calculated as follows:

$$\text{PV of year } n = \frac{\text{actual cash flow of year } n}{(1 + r)^n}$$

If an investment generates a positive NPV, then it should be pursued, at least in theory.

(Note: in the examination, you will be provided with this formula.)



Investment appraisal techniques and the time value of money

The time value of money is a key concept in modern financial management (look back to Chapter 1 for a reminder of this concept). Given that the effects and consequences of many investment opportunities can be long lasting, some investment appraisal techniques seek to reflect the time value of money.

In the previous chapter, we calculated the weighted average cost of capital (WACC). Remember that the cost of capital provides a benchmark against which investment opportunities can be appraised. Look back to earlier in this chapter for investment appraisal techniques that seek to reflect the time value of money (such as NPV); the WACC can be used as the discount rate.

! NEED TO KNOW

Some investment appraisal techniques seek to reflect the time value of money. The WACC can be used to determine the cost of capital. The WACC can be used as the discount rate.



Stages in the investment decision-making process

Irrespective of the investment appraisal technique that might be used to support an investment decision, Atrill (2014) suggests that there are a number of stages that are common to the investment decision-making process. These stages are outlined in Table 2.

Stage	Description
Determine availability of finance	The amount of finance that can be raised may be limited. Managers may also place internal limits on investment activities.
Identify profitable investment opportunities	Methodical and systematic searches for investment opportunities should be a normal part of the planning process.
Refine and classify proposed projects	Develop and classify investment opportunities. Categories include new product development, cost reduction exercises or replacement of non-current assets.
Evaluate the proposed projects	Apply investment appraisal techniques. Consider non-financial factors.
Approve the projects	Formal approval by senior managers in the business.
Monitor and control the projects	Information gathering, progress reporting and post-completion audit.

Source: Atrill (2014, p. 158)

Table 2: Stages in the investment decision-making process



! NEED TO KNOW

A number of stages are common to most investment opportunities. These stages are: determine availability of finance; identify profitable opportunities; refine and classify proposed projects; evaluate the projects; approve the projects; and monitor and control.



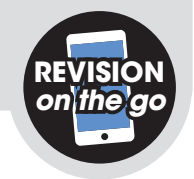
Advantages and disadvantages of different investment appraisal techniques

Businesses tend to use more than one investment appraisal technique (Alkaraan and Northcott, 2006). The NPV technique appears to be most common. The payback method is popular in smaller businesses and for fairly straightforward and non-strategic projects (Cohen and Yagli, 2007). Consider the advantages and disadvantages of each technique: there is no 'best' technique. The selection of an investment appraisal technique needs to reflect the needs of the business.

Remember: you will be given an opportunity to apply these different investment appraisal techniques later in the chapter. For now, consider the advantages and disadvantages of each in Table 3.

Technique	Advantages	Disadvantages
Payback	<p>Simple and quick</p> <p>Will tend to identify, and lead to the acceptance of, low-risk projects</p>	<p>Does not accurately allow for the timing of cash flows within the payback period</p> <p>Does not relate to wealth maximisation</p> <p>Ignores the cash flows outside the payback period</p> <p>Target payback period is arbitrary and difficult to establish</p>
Accounting rate of return (ARR)	<p>Simple and quick</p> <p>Profit-based and is therefore easy for managers to understand</p>	<p>Profit based: profit can be distorted by accounting adjustments</p> <p>Does not seek to adjust for the effects of the time value of money</p> <p>Target ARR is necessarily arbitrary and difficult to establish</p> <p>Does not relate directly to the concepts of wealth creation or wealth maximisation</p>
Net present value (NPV)	<p>Relates directly to wealth creation and wealth maximisation</p> <p>Reflects and adjusts for the effects of the time value of money</p> <p>Takes full account of the timing of the initial investment and of the cash inflows and outflows that arise during the project</p>	<p>Difficult to use and to understand</p> <p>Does not necessarily lead to the identification and acceptance of the least risky investment</p>

Table 3: Key advantages and disadvantages of different investment appraisal techniques



 OVER TO YOU**Activity 2: The advantages and disadvantages of different investment appraisal techniques**

Re-read the case study about Liqui and Meifing's hairdressing business. Reflect on the circumstances of the business and the nature of the assessment opportunity. Consider the nature of the investment appraisal techniques and their respective advantages and disadvantages. Explain which of the investment appraisal techniques would be most appropriate for use by Liqui.

 OVER TO YOU**Activity 3: Which investment appraisal technique is 'best'?**

There have been many attempts to answer this question. Some have sought to combine and synthesise the advantages of different approaches to investment appraisal, to maximise the combination of advantages and minimise the disadvantages of each.

Read the paper by Osborne (2010).

Osborne, M. (2010) "A resolution to the NPV-IRR debate", *Quarterly Review of Economics and Finance*, 50(2), pp. 234–239.

This paper provides an overview of an attempt to resolve the debate on the superiority of two common investment appraisal techniques.

Critically evaluate the attempt to resolve the debate and to integrate the best elements of each of these techniques.

! NEED TO KNOW

There is no 'best' investment appraisal technique. Each has both advantages and disadvantages. The selection of an investment appraisal technique needs to reflect the needs of the business.



5.2 Compare investment appraisal techniques for a range of typical investment scenarios to best meet the needs of the business

The application of payback period, ARR and NPV

Earlier in this chapter, you considered the nature and characteristics of the payback, ARR and NPV investment appraisal techniques. You have also examined the respective advantages and disadvantages of each of these techniques. At this point in the chapter, it is time to apply these techniques. A case study provides an opportunity to practise this application.

☰ CASE STUDY

Road Toll Ltd (Part 3)

Let's return to a case study that we considered earlier in chapters 3 and 4. At this point in this chapter, our focus is on the application of investment appraisal techniques.

The last time that we worked on this case study, we calculated the weighted average cost of capital (WACC) for Road Toll Ltd. Remember that the WACC can be used as the discount rate for investment appraisal techniques such as net present value (NPV).



Road Toll Ltd has been offered the chance to bid to operate a new toll road that connects mainland India to a nearby island.

The company has undertaken significant analysis of the likely level of demand over the next three years and has asked you, as the finance manager, to undertake further investment appraisal of the project to help it create the right kind of bid proposal. The following information is available.

The company has debt which costs 11% and its estimated equity cost of capital is 15%, it is geared 50:50.

The cost of the toll for using the road has been extensively researched and the marketing department has arrived at a fee of \$10 per vehicle, per journey as acceptable to motorists.

The finance team has estimated that running the toll service will cost \$1,200,000 per annum.

The contract is for three years and the likely acceptable bid price for exclusive rights to operate the toll road is \$1,000,000. All fixtures and fittings required to operate the toll road are included in this price, as is ongoing maintenance of the road and the toll facilities.

The analysis so far has predicted the following demand levels:

Estimated Demand			
Year	1	2	3
Number of journeys	150,000	185,000	350,000

These could vary by as much as 10%, i.e. they could be 10% higher or 10% lower than this estimate.

The company has a hurdle payback period of two years, a companywide average return on an investment of 25%.

So far the company has invested \$100,000 in research and administration.

OVER TO YOU

Activity 4: Application of investment appraisal techniques

Use the data in the case study about Road Toll Ltd to apply the following investment appraisal techniques to the investment opportunity:

- payback period
- accounting rate of return (ARR)
- net present value (NPV).

NEED TO KNOW

The cost of capital also provides a 'benchmark' or 'threshold' against which investment opportunities (that will use the finance raised in order to generate profit) can be appraised.



5.3 Analyse relevant non-financial factors to ensure that investment decision making takes account of the broader strategic needs of the business

Investment appraisal techniques and smaller businesses

As we saw earlier in the chapter, most businesses tend to use more than one investment appraisal technique. The payback method is popular in smaller businesses and for fairly straightforward and non-strategic projects. Given the disadvantages of the NPV technique, this is perhaps not surprising. Atrill (2014) suggests that there are a number of reasons why the payback technique appears to be popular in many small businesses. These reasons include because payback:

- is easy to understand and to use;
- can avoid the problem of having to forecast far into the future;
- emphasises early cash flows, there is greater certainty to, and accuracy in, the forecast of these early cash flows;
- emphasises the importance of liquidity, which is key for many small businesses.



OVER TO YOU

Activity 5: Investment appraisal techniques and smaller businesses

Compare and contrast the nature and characteristics of the businesses that we have considered as part of the case studies in this chapter: Liqui and Meifing's hairdressing business and Road Toll Ltd.

Explain which investment appraisal technique might be most appropriate for use by each of these businesses.

Modifications to the net present value (NPV) technique

The NPV technique of investment appraisal introduced in this chapter was based on cash flows. Sometimes, the identification and calculation of cash flows is not straightforward. Financial accounting is based on accounting flows (also known as the 'accruals basis'). Data taken from a firm's accounting records might, therefore, need to be adjusted from an accruals basis to a cash basis.

Other factors that might need to be considered when applying the NPV technique are identified by Watson and Head (2016) and are summarised in Table 4.

Factor	Description
Mutually exclusive projects	Sometimes, only one investment opportunity can be pursued. The interaction between two or more projects can cause a conflict of preferences to arise
Capital rationing	Limits on finance mean that competing projects need to be ranked
Discount rate	A business's discount rate can fluctuate over time
Indivisible, non-deferrable projects	When one or more projects are either indivisible or non-deferrable, rankings may have to be adjusted

Source: Adapted from Watson and Head (2016)

Table 4: Elements in the cost of debt financing



! NEED TO KNOW

Sometimes, the net present value technique needs to be adjusted to take account of factors other than the present value of future cash flows. These factors include: the need to forecast cash flows with accuracy; mutually exclusive projects; capital rationing; variable discount rates; and indivisible and non-deferrable projects.



OVER TO YOU

Activity 6: Modifications to the net present value technique

Re-read the Road Toll Ltd Case study and reflect on the circumstances of the case of Road Toll Ltd and the nature of the NPV technique. Consider if any of the factors might lead to a need for modification apply. Remember that these factors include: the need to forecast cash flows with accuracy; mutually exclusive projects; capital rationing; variable discount rates; and indivisible and non-deferrable projects.

Non-financial factors and their importance in investment decision making

Investment appraisal techniques can be very useful. However, they are only part of the process of investment decision making in business. Look back to Chapter 1: remember that much of

financial management assumes that the objective of the business is to maximise the wealth of its shareholders. Investment appraisal techniques, particularly NPV, can help to guide some investment decision making to achieve this objective.

However, there are a number of other factors that might need to be considered in investment decision making. Atrill (2014) summarises these factors as:

- **Strategy:** the overall strategy of the business needs to be considered. An investment opportunity that might seem to be suitable following an investment appraisal might not be appropriate in terms of wider strategy.
- **Flexibility:** some investment decisions are non-reversible. A business that seeks to retain flexibility might avoid otherwise profitable investment opportunities.
- **Creditworthiness:** the provider of the source of finance for an investment opportunity needs to be assessed for creditworthiness.
- **Capability:** the extent to which the business has the experience, skills and broader resources to undertake the investment.
- **Market reaction/competition:** the response of competitors to a business's decision to undertake or not to undertake an investment.



OVER TO YOU

Activity 7: Non-financial factors and investment decision making

Re-read the Liqui and Meifing Case study and reflect on the circumstances of Liqui and Meifing's business and the nature of the assessment opportunity. Identify and explain the non-financial factors that might be important in this investment decision. Use the categories of strategy, flexibility and creditworthiness to guide your answer.

READING LIST

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- Osborne, M. (2010) "A resolution to the NPV-IRR debate", *Quarterly Review of Economics and Finance*, 50(2), pp. 234–39.
- Watson, A. and Head, A. (2016) *Corporate finance: principles and practice*, 7th edition. Harlow: Pearson.

Glossary

Accounts receivables (trade receivables)

Money owed to a business by the customers to whom it has supplied goods and services.

Accounts payable (trade payables)

Money owed by a business to suppliers of goods and services.

Accounting rate of return (ARR) The average profit from an investment, expressed as a percentage of the average investment made.

Agency (problem) The theoretical relationship between the owners and managers of a firm.

Asymmetry of information Situations in which one party has access to privileged information that puts it in an advantageous position compared to another party.

Behavioural finance An approach to finance that rejects the notion that investors behave in a rational manner but rather make systematic errors when processing information.

Bonds Medium- or long-term debt securities, in bearer form, that commit the issuer to a specific repayment date and to interest payments at a fixed or variable rate.

Capital asset pricing model A model that can be used to determine an appropriate rate of return on an asset. It can also be used to assess the extent to which an investment portfolio should be diversified.

Capital markets Financial markets for long-term loan finance and shares.

Corporate governance The way in which firms are directed and controlled by their owners and managers.

Corporate social responsibility (CSR) A form of corporate self-regulation whereby businesses seek to comply with ethical standards, national and international norms and the 'spirit' of laws and regulations, particularly those related to ethics and environmental requirements.

Cost of capital The rate of return that is required by investors who supply finance to a business. The minimum rate of return that is required on an investment.

Current ratio A liquidity ratio that relates the current assets of the business to its current liabilities.

Debt Sometimes referred to as 'borrowing'. Carries a finance or 'interest' charge.

Divestment The sale of part of the operations of the business.

Dividend payout The percentage of distributable earnings paid out as dividends to shareholders.

Dividends A transfer of assets, usually in the form of cash, from the business to its shareholders.

Due diligence An investigation of all material information relating to the financial, technical and legal aspects of a business prior to making an investment.

Earnings per share An investment ratio that divides the earnings (profits) generated by a business, and available to ordinary shareholders, by the number of shares in issue.

Economic Value Added The difference between net operating profit after tax and the required returns from investors.

Efficient markets (hypothesis) (EMH) Markets in which new information is quickly and accurately absorbed by investors, resulting in appropriate share-price adjustments.

Equity The 'ownership interest' in a business.

Eurocurrency Currency held outside of its home market.

Expected values A technique that assigns probabilities to possible outcomes.

External stakeholders Persons, groups of organisations who are impacted by the business.

Financial gearing (leverage) The relationship between the debt and equity finance that is used in a business.

Forward contracts Contracts that allow businesses to fix, in advance, future borrowing and lending rates, based on a nominal principal over a given period.

Futures (contracts) An agreement to buy or sell a standard quantity of a specific financial instrument or foreign currency at a future date and price agreed between two parties.

Hedging The mitigation of risk exposure by undertaking equal and opposite transactions.

Income statement A financial statement in which the amount of wealth (or profit) generated by the business is reported.

Initial public offering (IPO) Issuing shares for the first time in order to obtain a stock market listing.

Insider trading Using 'inside' information to buy and sell securities in order to obtain abnormal returns.

Internal stakeholders Persons, groups or organisations who participate in and serve the needs of the business.

Interest rate risk The risk that a business's profits will be adversely affected by interest rate changes.

Internal rate of return (IRR) The discount rate for an investment that has the effect of producing a zero net present value.

Lagging Delaying foreign currency payments in order to benefit from favourable exchange rate movements.

Loan notes Long-term borrowings usually made by limited companies.

Matching principle of finance The principle that a source of finance and the purpose to which it is put should be mutually compatible.

Maximise the wealth of shareholders The concept that the primary objective of a business is to maximise the wealth of its shareholders. This idea underpins modern financial management.

Mergers The combination of two or more businesses to form a single business.

Money markets Markets for the borrowing and lending of short-term finance.

Mortgage A loan secured on property.

Net present value (NPV) The net cash flows from an investment that have been adjusted to take account of the time value of money. NPV is used to evaluate investment projects.

Netting The offsetting of amounts owed between businesses in a group in order to minimise inter-business indebtedness and exchange rate risk.

Normal distribution The description applied to the distribution of a set of data that, when displayed graphically, forms a symmetrical 'bell-shaped' curve.

Operating gearing The proportion of a business's fixed costs relative to its total costs.

Options An agreement giving the holder the right, but not the obligation, to buy or sell a specified amount of a commodity or financial instrument over a specific time period and at a specified price.

Payback period The time taken for the initial investment in a project to be repaid from the net cash inflows of the project.

Projected financial statements Financial statements such as the income statement, statement of financial position and statement of cash flows that have been prepared on the basis of estimates and that relate to the future.

Quick ratio The ratio of current assets less inventory to current liabilities.

Restrictive covenants Clauses included in debt finance that place restrictions on a business's future actions in order to protect the interests of existing creditors.

Retained profit Cash retained by a business for reinvestment purposes.

Return on capital employed (ROCE) A profitability ratio that expresses the relationship between the operating profit and the long-term capital invested in the business.

Rights offer An issue of shares to existing shareholders, pro rata to their existing shareholdings, in exchange for cash.

Risk The likelihood that what is estimated to occur will not actually occur.

Scenario (analysis) A method of dealing with risk that involves changing a number of variables simultaneously so as to provide a particular scenario for managers to consider.

Sensitivity analysis The technique of analysing how changes in an individual project variable affect a project's overall net present value.

Separation of ownership and control The tendency for shareholders to appoint managers to run businesses on their behalf.

Shareholders The owners of businesses that have the legal form of limited companies. Ownership rights are conferred by the allocation of ordinary share capital.

Shareholder value Putting the needs of shareholders at the heart of management decisions.

Shareholder value analysis A method of measuring and managing business value based on the long-term cash flows generated.

Share option schemes Schemes that offer share options to employees or directors of a business in order to provide an incentive.

Simulation A method of dealing with risk that involves calculating probability distributions from a range of possible outcomes.

Spot (market) A market for immediate transactions in, for example, currencies.

Stakeholder Any party that has an interest in a business.

Stakeholder theory of financial management The view that each stakeholder group should have its interests reflected in the financial management objectives and activities of the business.

Statement of cash flows A financial statement in which the movements of cash into and out of a business are reported.

Statement of financial position A financial statement in which the accumulated wealth of the business is reported.

Subordinated loan A loan that is ranked below other loan capital in the order of interest payment and capital repayment.

Swap An agreement between two parties to exchange interest payments based on an agreed principal.

Takeover A situation in which one business acquires control of another business.

Tax shield The benefit of shielding profits from corporate tax, calculated as the present value of the future tax savings arising from debt finance.

Term loan A loan, usually from a bank, that is tailored specifically to the needs of the borrower. The loan contract usually specifies the repayment date, interest rate and so on.

Time value of money The value of money (cash) changes over time. The concept that \$1 received in the future is not equivalent to \$1 received today due to factors such as risk and opportunity cost.

UK Corporate Governance Code A code of practice for companies listed on the London Stock Exchange that deals with corporate governance matters.

Uncertainty A position in which all possible outcomes cannot necessarily be identified and/or quantified.

Weighted average cost of capital (WACC) The average rate of return that is required on all the sources of finance that are used by a firm. It can be used as the discount rate in investment appraisal.

Working capital The difference between a business's current assets and current liabilities.