Corporate Financial Strategy
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This book describes how corporate finance works in practice. It shows how an appropriate financial strategy can be designed to complement the corporate strategy and add value to an organization. We consider the relevant theories of corporate finance, but our main thrust is to show how they can be applied in the real world.

The material for the book is based upon many years’ experience as practitioners and consultants in, and teachers of, corporate finance. It has been refined and tested by use on advanced MBA courses at Cranfield School of Management and in programmes held for senior managers and financiers around the world. To bring it to life we include a number of real company Case Studies, together with a wide range of illustrative examples. We link together various parts of financial theory and try to explain numerically how financial markets really work.

We have made no attempt to reproduce the many existing textbooks on financial theory, although the requisite theories are summarized and explained. The objective is to go much further in placing the theory into a usable context which should enable practising managers to understand more fully the potential value added by the best financial strategy available to them.

The structure of the book has been designed to make it of value even if not read from cover to cover. It is divided into four parts.

In Part One we give an overview of financial strategy and its role within the overall corporate strategy of the business. Set in the context of shareholder value, we examine what the
share price tells us about the market’s expectations of the business and how this can affect both corporate and financial strategies. We build up a model examining how these expectations and the financial drivers change over the lifecycle of the company, and demonstrate what this means for a company’s financial choices. We also examine how and why governance requirements of the business change as it develops through different stages of ownership.

Part Two considers in much more detail the various components of the financial strategies which are appropriate to each stage of the company’s development. We consider how the company’s strategy will adapt to its changing circumstances, look at the changing sources of business risk, and explain how dividend policies and funding sources match the organization’s needs.

In Part Three we move away from the lifecycle model to examine different types of financial instrument. The choice of financial instruments is fundamental to designing a financial strategy, and we deconstruct the key features of a variety of securities, setting them out in terms of the basic risk-return relationship that underlies pretty much everything in finance. Within this section we also examine companies’ dividend and buyback choices.

We have entitled Part Four ‘Transactions and Operating Issues’. Here we consider the major transactions that a company might encounter – flotation, acquisitions, restructuring. Separately, we examine the role of the private equity industry in business today, and show how and why these investors can create value for their participants. We also look at issues fundamental to the running of a business – international considerations and working capital management.

We have relegated underlying detail to the Appendices. Here you will find a brief overview of all of the theories of corporate finance needed to understand our approach in this book. We also use Appendices to give further detail on share options, and to set out advice on the preparation of forecasts, an area which is fundamental to devising a financial plan, and which we have found in practice to be sadly inadequate in many businesses.

Very deliberately the illustrative examples and real case studies used throughout the book have been analyzed using relatively simple mathematics; the simplifying assumptions do not destroy the underlying reasoning behind the analysis. The objective is to convey the conceptual logic behind financial strategy rather than to confuse with spuriously accurate mathematics and excessively complex formulae.

Changes in this edition

The previous edition of this book was published six years ago. Since then much has changed. Economies have gone through cycles of boom and bust; companies and their finance have become yet more global. When returning to update the text it was a comfort to us to see that the principles and commentary remain valid today, and we have not made any significant changes to the structure of this text. However, in those six years we have worked with more companies, and have learned more ourselves. Accordingly the book has been updated to reflect this.
The major changes we have made in this edition include:

### Executive summary of the key models
Chapter 4 contains the main models underlying the book and is necessarily long. To simplify matters for the reader in a hurry we have prepared a new Chapter 3, which briefly summarizes its content.

### New chapter on governance and finance
Corporate governance is becoming more and more important to organizations. Chapter 5, new to this edition, sets out how governance impacts upon a company’s financial strategy over its ownership lifecycle. The chapter on executive compensation has been moved from Part Four of the book to sit next to this, as Chapter 6.

### More on private equity
Private equity plays a more significant part in the global economy than it did a few years ago. Chapter 17 has been revised and expanded to reflect this.

### New appendix on forecasting
Much of financial strategy depends on a company’s forecasts of its funding requirements. Appendix 3, new to this edition, discusses forecast preparation, and includes a brief section on behavioural finance.

We have also updated many of the Case Studies and Working Insights, and made textual alterations to most chapters.

### Companion website
At the request of our readers, the book now has a companion website, www.elsevierdirect.com/9780750686655 and www.textbooks.elsevier.com/9780750686655. On this website you will find all of the Figures and many of the Working Insights used in the book, together with the summary points and a list of key terms used in each chapter. We also include some of the references and internet sites that we regularly use in our own work. And we have a fondness for some of the older Case Studies that were in the second edition but had to be deleted this time around, so we include them on the website in case you too appreciate them.

### Acknowledgements
We have received input from many sources in preparing this third edition. We are grateful to generations of MBA students and executives, and to colleagues and past colleagues at Cranfield, all of whom have given us feedback and ideas. Further, we must thank Andrew Meikle of Ernst & Young, Brian Shearer of Grant Thornton, and Chris Pierce of Global Governance Services, each of whom provided useful advice. All errors, of course, remain our own responsibility.

We dedicate this edition of the book to our respective families.

Ruth Bender
Keith Ward
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# Part 1: Putting Financial Strategy in Context

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Corporate financial strategy: Setting the context

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The aim of a company is to create value for its shareholders. Although other stakeholders are important, and are discussed in this chapter, the shareholder is the principal stakeholder, and creation of sustainable shareholder value is the main objective. In order to create this value, the company has to create a competitive advantage to exploit inconsistencies in the markets in which it operates – both its trading environment and its financial environment. In this book we discuss how financial strategy can be used to identify and exploit value-creating opportunities.

In this chapter we define financial strategy as having two components: (1) the raising of funds needed by an organization in the most appropriate manner and (2) managing the employment of those funds within the organization, including the decision to reinvest or distribute any subsequent profits generated. These are the issues addressed throughout the book.

A two-stage investment model is introduced, and it is noted that ‘value’ can relate either to the underlying business or to the value created for the investors; a successful company needs to match the two, and to ensure that its share price reflects the intrinsic value of its businesses.

An understanding of corporate value is impossible without addressing the issues of perceived risk and required return. We examine the relationship between these factors; note that different stakeholders may have different risk perceptions; and define ‘value’ as relating to returns generated in excess of the required return. This latter point means that value is only created by investments generating a positive net present value (NPV). Following from this, three metrics of value calculation are introduced; two relating to ‘internal’ value of the business, and one which shows value to the investor.

Finally in this chapter, we discuss the apparent anomaly in that financial academics show that markets are indifferent to the creative manipulation of accounting results, whereas companies and their advisors seem to spend considerable time and effort doing just that. We discuss what this means for financial strategy.

The main focus of a financial strategy is on the financial aspects of strategic decisions. Inevitably, this implies a close linkage with the interests of shareholders and hence with capital markets. However, a sound financial strategy must, like the best corporate and competitive strategies, take account of all the external and internal stakeholders in the business.

Capital market theories and research are mainly concerned with the macro-economic level, whereas financial strategies are specific and tailored to the needs of the individual company and, in some cases, even to sub-divisions within that company. Therefore the working definition of financial strategy which will be used throughout the book tries to take account of the need to focus on these inter-relationships at the micro level of individual business organizations.
Financial strategy has two components:

1. Raising the funds needed by an organization in the most appropriate manner.
2. Managing the employment of those funds within the organization.

When we discuss the most appropriate manner for raising funds, we take account both of the overall strategy of the organization and the combined weighted requirements of its key stakeholders. It is important to realize that ‘most appropriate’ may not mean ‘at the lowest cost’: a major objective of financial strategy should be to add value, which may not always be achieved by attempting to minimize costs. And when we discuss the employment of funds, we include within that the decision to reinvest or distribute any profit generated by the organization.

If it is remembered that a major objective for commercial organizations is to develop a sustainable competitive advantage in order to achieve a more than acceptable, risk-adjusted rate of return for the key stakeholders, a logical way to judge the success of a financial strategy is by reference to the contribution made to such an overall objective.

FINANCIAL STRATEGY AND STANDARD FINANCIAL THEORY

Let us state our case immediately – if you are an apostle of the beliefs of modern financial theory, this book is going to upset you. If you firmly believe in the efficient market hypothesis, or consider that the market value of a company really reflects the discounted value of its future cash flows, you are not going to like much of what we have to say. And should you believe implicitly the work of Modigliani and Miller (as an absolute rather than as a guide to theory development) then this is not the book for you¹.

However, if, as we have, you have pondered why it is that intelligent and well-qualified finance directors and their advisors seem to be prepared to spend large amounts of their time and their shareholders’ money in devising complex schemes to do things which, according to financial theory, are either completely unproductive or actually counter-productive in terms of increasing shareholder wealth … read on.

There is a large body of research evidence which indicates that financial markets are quite efficient at identifying and allowing for some relatively simple accounting tricks, such as changes in stock valuation or depreciation policies, etc. The research shows that such accounting manoeuvres do not increase company value, as the markets see through them. However, as will be illustrated by the real examples used throughout the book, many reputable companies employ very sophisticated ‘creative’ accounting presentations to disguise the effects of their presumably widely understood transactions. A major thrust of this book is therefore to try to bridge this apparently growing gap between the academic theorists, who profess to believe that financial markets are becoming ever more

¹ Having said that, if you have no idea about the concepts discussed in this paragraph, it would be well worth your while to explore them in one of the standard financial text books, for example Corporate Financial Theory and Practice, by Vernimmen et al., Wiley, 2005.
efficient and perfect, and the practising financial managers, who ignore the financial theory and rely on what they see as working in practice.

A fundamental proposition behind this book is that financial theory fulfils a very useful conceptual role in providing an analytical framework with which to dissect and understand actual, individual corporate finance transactions. It is also a major contention of the book that people are wrong to interpret financial theory as suggesting that shareholder value cannot be significantly improved by the implementation of the most appropriate financial strategy for each particular business. Value, as we shall see, is a function of the relationship between perceived risk and required return. Shareholders, and other key stakeholders, do not all perceive risks in the same way, nor do they have the same desired relationship between risk and return. Thus value can be created in the cracks between the different perceptions, and it is here that financial strategy can blossom.

**RISK AND RETURN: A FUNDAMENTAL OF FINANCE**

It is a fundamental principle underlying financial theory that investors will demand a return commensurate with the risk characteristics that they perceive in their investment. This is illustrated in Figure 1.1.

The diagram in Figure 1.1 is known colloquially as the ‘risk–return line’ and shows the required return for any given level of risk. Although the axes are often referred to as ‘risk’ and ‘return’, it is important that you understand that their full descriptions are ‘perceived risk’ and ‘required return’. If I do not understand the full extent of the risks that I am taking on an investment, I may settle for a lower required return than another investor with a better appreciation. Alternatively, a sophisticated investor with a great understanding of the low probability of a particularly adverse outcome may settle for a lower return than a naïve investor who runs scared of the downside. What is important is each investor’s perception of the risk; it is in the gaps between different perceptions that a tailored financial strategy can often add value.

![The correlation between risk and return](Figure 1.1)
FINANCIAL STRATEGY

We must start this section with a disclaimer: although we will use some strategic models, this is not a book on competitive strategy. Many excellent tomes discuss that subject, setting out the whys and wherefores of determining and pursuing appropriate strategies. This book is about corporate financial strategy and it is in this context that strategy is discussed. However, because we make this distinction, we have to define our terms very clearly, so that you, the reader, are left in no doubt about our purpose.

Consider the representation of a company in Figure 1.2.

To most people, a company is seen as an end in its own right. It serves markets, manufactures products, employs staff, and its strategy should be about selecting the most appropriate markets, production facilities or employees in which to invest. (Throughout the book, the term ‘product’ will be used to describe both goods and services, and the term ‘markets’ will be used to cover groups of customers or specific channels of distribution.) Corporate growth and success – often measured in terms of turnover or profit – are what’s seen as important, and the business develops a momentum of its own. But Figure 1.2 shows that the investment process does in fact extend over two stages: investors

Figure 1.2

The two-stage investment process

Shareholders (and others) invest in company

↓

Company invests in portfolio of projects

In a perfectly competitive market the portfolio of projects achieves exactly the return demanded by shareholders and other sources of finance i.e. no value is created
choose the companies in which they want to invest, and the companies choose how to apply those funds to their activities.

For example, as investors we can choose to invest our funds in the UK or elsewhere in the world. We can opt to put our money into the pharmaceutical sector, or into printing or food production or any other sector we choose. And if we do care to be exposed to UK pharmaceutical companies, we can decide specifically, for example, to buy shares in GlaxoSmithKline or in Oxford BioMedica. The top process in Figure 1.2 relates to this investor decision.

The lower process shows how the company (acting through its directors’ decisions) decides that yes, it does want to be in the pharmaceuticals sector; that it will apply this strategy by developing its own drugs (or perhaps by buying the results of others’ research, or perhaps by selling generics); that it will sell in various specific geographical markets but not others, perhaps investing in a dedicated sales force, etc. The ‘projects’ referred to in the lower box in Figure 1.2 refer to how the company configures its assets, ranging from how many staff it chooses to employ, through to whether it should develop a new product, acquire a competitor, or move into a different sector.

The energies of most business people tend to be applied to the lower box, to improving the investment in the project portfolio, to ‘making it a better business’. But in corporate financial strategy our aim is different: we are trying to improve matters in the top box, to make it a better investment for shareholders, to create shareholder value.

This leads us to two definitions, one for each of the processes shown in Figure 1.2.

The two definitions of value shown in Working insight 1.1 correspond to the two-stage investment model. Investor value is about creating value in the ‘top box’, for investors. Corporate value, the one with which most business people are more familiar, is about configuring the company to be a ‘better’ business. It is a prime role of management to ensure that the shareholder value properly reflects the corporate value; this is one of the roles of financial strategy. Further, as we will discuss later, our working definition of ‘investor value’ comes down to ‘value for shareholders’, focusing on a specific category of investor.

It is possible for a business to generate value in one box, but not the other. In analyzing a company, there are four (at least four) questions to ask: Is it a good product? Is it a good business? Is it a good company? Is it a good investment? Working insight 1.2 illustrates this.

**Definitions of value**

*Investor value:* reflects the required returns of the capital markets, and is mirrored in the financial value placed on the company’s securities by the markets.

*Corporate value:* is the present value of the expected returns from a combination of the current business strategies and future investment programmes.
VALUING INVESTMENTS

Any financial investment can be valued by reference to the present value of the future cash flows which it is expected to generate. Using this well-developed technique, known as discounted cash flow or DCF\(^2\), the expected future cash flows are converted to their present value equivalents by multiplying them by an appropriate discount factor (an inverse interest rate). It is intuitively obvious that any future cash inflow is not worth as much as the same sum of money received immediately due to the waiting period involved. Even in a theoretical world of certain future cash flows, money has a time value.

However, in the real business world, there is also the risk that these expected future cash flows will not actually be realized. Thus the discount rate used must take into account both the time value of money and the associated risk. Applying such an appropriate discount rate to all the future cash flows makes the resulting present values directly comparable. In other words these present values can be meaningfully added together so as to evaluate the total financial return from any potential investment. This technique can be considered as being equivalent to converting various different foreign currencies into a single common currency, so that the amounts can be meaningfully compared. No one can directly compare sums of money expressed in US dollars, euros and yen, but once converted into a single currency, their relative values are immediately obvious.

With this simple relative type of comparison, it does not really matter which base currency is used for the calculation. However in most cases there is a need

\(^2\) Readers unfamiliar with the technique will find it fully covered in any of the standard finance textbooks.
to compare these relative values against a more meaningful external frame of reference; most people achieve this in the case of foreign currencies by converting foreign currencies back into their domestic currency, which is their normal monetary value reference base. The same is true for DCF analysis: techniques (such as compounding to horizon) exist to extrapolate all cash flows forward to the end of the projects and then to compare directly the relative terminal values. The problem is that, even if several associated technical problems are resolved, investors cannot readily interpret and value such future cash summations. However, they can easily compare alternative investments if they are all expressed in today’s values. Hence the normal convention is to bring all future cash flows back to today, by calculating their present value equivalents: all these present values are then additive to arrive at the NPV for any investment.

Using DCF techniques, a share in a company could be valued as the present value of its expected future dividend stream. To value the company as a whole, one could discount all of its expected future pre-finance cash flows.

Applying this technique to any investment immediately highlights a key element in increasing shareholder value; shareholder value is increased only if the appropriately discounted present value of the expected future cash flows generated by any investment is greater than the current cost of that investment. It is not good enough merely to generate the ‘market’ (risk-adjusted) return – we have to exceed it.

Why is it not good enough merely to satisfy shareholders’ requirements? The answer to that is that the risk–return line shows what the market requires for a particular level of risk. Any competitor company should deliver that on average – it is the norm. Providing value means being better than the market, otherwise what reason is there for the shareholder to invest in one company rather than another? Merely generating the rate of return required by the investor creates no value at all: it would be the equivalent of paying $100 to receive (immediately) the sum of $100 – value is not destroyed in such a transaction, but there is no real reason for bothering to undertake it. In a zero NPV transaction investors are merely swapping current sums of money for their equivalent in future cash flows. This very obvious but absolutely critical point is numerically illustrated in Working insight 1.3.

CREATING SHAREHOLDER VALUE

In a perfectly competitive market, market forces would dictate that all investments would receive only their risk-adjusted required rates of return. Consequently no shareholder value would be created. Accordingly it stands to reason that shareholder value is only increased by exploiting imperfections in the marketplace.

The greatest imperfections arise in product markets, that is, the actual marketplaces in which specific products are sold to customers. Therefore, companies can increase shareholder value by creating a sustainable competitive advantage through selecting and implementing an appropriate competitive strategy. For example, barriers to entry into an industry may be created to keep out competitors and thus prevent the rules of perfect competition from applying in
Increasing shareholder value by creating a positive NPV

Investment opportunities:

Project A  Invest £100,000 for 10 years.  
Receive £20,000 interest per year.  
Repayment of £100,000 at the end of year 10.

Project B  Invest £1 million in a perpetual annuity.  
Receive £200,000 interest per year forever.  
The investor’s minimum return for these types of projects is 20% per annum (ignore tax).

Project A

<table>
<thead>
<tr>
<th>Cash flows</th>
<th>Actual (£000s)</th>
<th>Discount factor</th>
<th>Present value (£000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 0</td>
<td>Investment outflow</td>
<td>(100)</td>
<td>1</td>
</tr>
<tr>
<td>Years 1–10</td>
<td>Interest income</td>
<td>20 per annum</td>
<td>4.192</td>
</tr>
<tr>
<td>Years 10</td>
<td>Repayment of principal</td>
<td>100</td>
<td>0.162</td>
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</tbody>
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Net present value (i.e. value created by investment) £0

Project B

<table>
<thead>
<tr>
<th>Cash flows</th>
<th>Actual (£000s)</th>
<th>Discount factor</th>
<th>Present value (£000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 0</td>
<td>Investment outflow</td>
<td>(1000)</td>
<td>1</td>
</tr>
<tr>
<td>Years 1–∞</td>
<td>Interest income</td>
<td>200 per annum</td>
<td>5</td>
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Net present value (i.e. value created by investment) £0

Both investments merely produce an adequate or a satisfactory return as demanded by the investors – neither produces an excess return which increases shareholder wealth over other alternative investments of similar risk.

that industry. As a result, new companies cannot economically afford to enter the industry even though the financial returns available are above normal levels. This restriction on potential new competition enables the existing players in the industry to enjoy an apparently excessive financial return on their investments.
However, in reality, the creation of an effective barrier to entry normally requires substantial additional financial investment; either in very strong branding through heavy marketing expenditure, or in achieving material cost advantages through the development of significant economies of scale, etc. Consequently this apparently excessive financial return can initially be regarded as providing the normal required return on this additional investment. Any remaining excess financial return represents the true ‘value added’ for shareholders.

More importantly from our point of view, investment can be related to the two-stage process illustrated in Figure 1.2, in which investments in specific product–market interfaces form the second stage. Initially a group of investors (shareholders, banks, etc.) invest funds in a company, and the company subsequently invests these funds in a range of specific projects, encompassing individual products in particular markets. The optimum relative mix of these investors in any particular company, the way in which they perceive the risks involved in the investment and the alternative methods of giving them their required financial return can also create a super-normal return and are the principal aspects of financial strategy. Consequently this book concentrates primarily on this first stage of raising the funds required by the business and on the methods of managing these funds within the company. Thus financial strategy is about raising the funds required by the organization in the manner most appropriate to its overall corporate and competitive strategies, and also managing the use of those funds within the organization.

In the theoretical world of perfectly competitive markets, the overall portfolio of projects which makes up each company can only achieve exactly the risk-adjusted return required by the investors in the company. Indeed the modern theory of corporate finance goes further and argues that these investors will not even be financially compensated for any unnecessary risks taken by the company or for any wasted expenditure incurred by its managers. As explained in much more detail in Appendix 1 on financial theory, investors can diversify, and hence reduce, their overall risks by holding an appropriate portfolio of different investments. Thus their dependence upon the financial performance of any single company can be reduced by such diversification strategies. Consequently in an efficient financial market the return received from any such single company investment should be driven only by the specific risk associated with that investment, when considered relative to the total available investment opportunities.

This investor-based view of portfolio management suggests that if companies invest in an inappropriate range of projects which, when combined directly together, compound the overall risk of the business, they will reduce investor value rather than increase it. Sophisticated investors could build their own investment portfolios so as to achieve an equivalent overall return, but without incurring the increased business risk associated with this combined business. Consequently they demand a higher return to compensate for the higher risk, and this is achieved by giving the investment in such a combined business an appropriately lower value. It is not the high risk of any individual project which destroys investor value, as the high-risk project should have a correspondingly high required return to offset the risk. However if the overall risk of the portfolio is greater than the sum of its parts, the total portfolio (i.e. the company) will be worth less to an investor.
Interestingly, companies which try to reduce risks by investing in a well-diversified range of products can also destroy shareholder value rather than enhance it. If significant costs are incurred by the company (such as the classic conglomerate) in creating and managing such a diversified portfolio of businesses, the investor may be substantially worse off. Intelligent investors can achieve this reduced investment risk at much lower cost by setting up their own, similarly diversified investment portfolio. Consequently in an efficient and rational financial market, they will penalize, rather than reward, companies for incurring these unnecessary management costs which do not add value. Indeed in the real world, with its inherent imperfections, this illustrates the ways in which shareholder value can be created. As shown in Figure 1.3, any strategic move above the risk–return line creates shareholder value, whereas anything which results in a position below the line destroys existing value. Therefore it is not simply a question of increasing return or reducing risk, but of the level of increased return compared to the increased perception of risk, and vice versa.

In Figure 1.3, any strategy which moves below the shareholders’ risk–return line will destroy shareholder value. Thus, strategy A is obviously value enhancing, increasing returns by far more than the associated risk profile. Similarly, strategy B is obviously value destroying; although returns have increased, the disproportionate rise in risk moves the value below the line. (For strategy B, markets might be fooled for a short time by the increase in profits, but as soon as the risk-increasing nature of the strategy changes is realized, share prices will fall.)

Strategy C in Figure 1.3 is interesting. Although it is obvious that C should add value, as it is an ‘above the line’ move, many people have difficulty with the concept of a company deliberately reducing profitability and yet still adding value. However, this is a perfectly legitimate, and common, tactic – any time a company buys an insurance policy it is reducing profits in order to safeguard against risk.

![Figure 1.3: Value-creating alternatives](image-url)
A more esoteric example of a decision to follow strategy C can be seen in the actions of T&N, a UK-based international company facing huge personal injury claims relating to its historic business in the asbestos industry. The company’s advisors estimated that the unquantified liability hanging over the company was reducing its market capitalization by up to £1 billion. In November 1996, in order to remove the risk and the market discount, T&N acquired an insurance-based cap on its asbestos liabilities. This cost the company less than £100 million, and had the effect of uplifting the market capitalization of the company by over 20% on the day of the announcement, a rise of some £170 million.

It should however be noted that there is a potential conflict between the risk–return perceptions of the senior managers of the company and its investors, and that this could cause a conflict in their objectives. The theoretical assumption is that everyone has the same perception of risk, but here is a situation where this is most unlikely to be true. As has already been discussed, professionally managed investment institutions can develop sophisticated investment portfolios which substantially diversify their investors’ risk away from any particular company. It is much more difficult for the full-time managers within a particular company to diversify their perceived risks, for example, the risk of losing their jobs, which may be associated with any specific high-risk business strategy (particularly if the failure of such a high-risk strategy could lead to the total financial collapse of the company). Senior managers can, and often do, attempt to achieve some degree of risk reduction either by implementing a less risky strategy or by diversifying into other areas of operation. As the risk of corporate collapse, or high volatility in profits, etc., is the key driver to this managerially led diversification strategy, the business is likely to invest in less risky projects or in areas of operation which are counter-cyclical to the current main business focus.

Such a perceived need to reduce overall risk may well become more important to these key managers as they become older, particularly if they have very long periods of employment in a single company. These long-serving managers may only have the normal linear type positive correlation between risk and return at the lower end of the risk spectrum. However, they may demand an almost exponentially increasing return in order to compensate them for taking on what they would otherwise consider as an unacceptably high-risk strategy. This is graphically illustrated in Figure 1.4, which also shows the well-diversified institutionally based investor, who has a linear risk–return expectation across the whole range of potential investment risks.

A type of investor with yet another different potential perception of risk is also shown in Figure 1.4: the venture capitalist3. Venture capitalists can be categorized as investors who are only interested in relatively high-risk and high return investments. This is their chosen investment territory, which means that they would consider most large diversified businesses as not being worth their consideration. Thus they demand a relatively high minimum return from any project they take on (represented by the horizontal portion of their line in Figure 1.4). Inevitably this tends to force them to focus on higher risk projects as only these can supply the type of return which they consider acceptable.

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3 Later in this book we will define ‘venture capitalists’ separately from ‘private equity’, but there is no need to make that distinction at this point.
In determining a suitable financial and corporate strategy for a business, it is important to understand the drivers of the key stakeholders. A venture capital-backed business run by a risk-averse senior manager may be an uncomfortable place to be, as there will be a clash in their objectives: the minimum return demanded by the venture capitalist may be greater than the return associated with the highest risk project which is acceptable to the manager.

**Figure 1.4**

**Risk profiles of different stakeholder groups**

The well-diversified investor takes a linear view of the risk–return relationship. This contrasts with the long-serving manager, who becomes very risk averse above a certain level of risk. The venture capital fund demands too high a return to invest in low-risk opportunities, but becomes interested at higher risk levels. Although the venture capital required return could be synchronous with that of other investors, it is shown here as being slightly lower, for illustrative purposes.

**SUSTAINABLE COMPETITIVE ADVANTAGE**

The overriding reason for the existence of most commercial organizations is to achieve a more than acceptable return for the investors and other key stakeholders in the business. As demonstrated in Figure 1.1, this return must be assessed in the context of the particular risks associated with any business, as it is a fundamental economic principle that increased risks must be compensated for with higher potential for financial returns.

It is also fundamental that this economic corporate objective is described as achieving a ‘more than acceptable’ return (i.e. a positive NPV), even though this statement may appear to contradict much of modern financial theory. This theory suggests that it is impossible for investors consistently to achieve an
abnormally large risk-adjusted return on their investments. In a perfectly com-
petitive market this is undoubtedly true, as these perfect competition forces will
-drive down all returns to the ‘normal level’ required by the market. For exam-
ple, if the ‘market’ rate of return is 9% per annum, it is impossible for any spe-
cific investment, with a risk profile equivalent to the market, to sustain a different
level. (Some of the prerequisite conditions for a perfectly competitive market are
that all investors possess exactly the same information about the present, have the
same expectations regarding the future, and have exactly the same risk profiles.)

Consequently, if a particular investment were to show a return above the
ormal market level, these well-informed investors would all try to buy this
investment. Inevitably this buying pressure would increase the price of the
investment and reduce the rate of return to the normal market level, when it
would no longer be exceptionally attractive. Conversely, an investment show-
ing a lower than normal return is unattractive, with existing investors looking
to sell but other potential investors having no incentive to buy. This will force
the price of the investment to fall, until its return has been increased up to the
normal market level.

In the real world, it is impossible to find any long-term investment which
can truly be regarded as risk free. (This has been very forcibly demonstrated to
many investors in recent years with the dramatic collapse of very large compa-
nies and even financial institutions around the world, and the renegotiations
of debt repayments by several governments.) Even a completely government-
backed security, issued in a financially sound and politically stable economy,
can only be regarded as truly risk free if it is a very short-term investment.
Over the longer term, such a government security has risks regarding the rela-
tive purchasing power of the funds which are received back at the final maturity
of the investment; higher than expected inflation could significantly reduce
the real value of these funds. Also such investments normally pay interest dur-
ing their lifetime, and the total expected return over the life of the investment
would have been based on reinvesting these periodic interest receipts at the
market rate of return until the final maturity date. If prevailing interest rates
decline during the period of the investment, the total funds available on final
termination may be lower than originally forecast; such a difference introduces
a risk associated with this guaranteed investment.

Much greater uncertainties and risk are inevitable facts of life in the commer-
cial world, where future returns are neither guaranteed nor known with any
degree of certainty, and where the competitive situation can change dramatically
in a very short period of time. Consequently the ability to manage in such an
environment is a critical component of any organization’s business strategy, as
will be made clear throughout the book. In fact it is true to say that a business
can only achieve its desired aim of a ‘more than satisfactory return’ for its inves-
tors by identifying and exploiting imperfections in the markets in which it oper-
ates. Thus a major objective of corporate and competitive strategies is to develop
a sustainable competitive advantage, which enables the business to achieve and
maintain a return in excess of that which would be allowed in a perfectly compet-
itive market. This process is essential to increasing shareholder value, which itself
is a key objective for nearly all the large companies, particularly those which are
publicly quoted, which today dominate the major economies of the world.
MANAGING AND MEASURING SHAREHOLDER VALUE

Thus far, we have defined shareholder value in terms of the investors’ achievement of a positive NPV – a return that more than compensates for the perceived risks. This was illustrated in Figure 1.3 as being an ‘above the line’ return. In this section we examine three different (but linked) ways of measuring shareholder value, and demonstrate how they might be used in practice to create that value. The three metrics under consideration are:

- Shareholder value added
- Economic profit
- Total shareholder return.

SHAREHOLDER VALUE ADDED

The Shareholder value added (SVA) approach set out by Alfred Rappaport uses DCF techniques to estimate the value of an investment, discounting forecast cash flows by the cost of capital.

Rappaport stated that the value of a company is dependent on seven drivers of value, as shown in Working insight 1.4.

Management can use their knowledge of current sales levels and forecasts of the first five drivers in order to prepare cash flow forecasts for a suitable period. Such a period would be defined based on the likely period of the company’s competitive advantage – driver six. Discounting these at the cost of capital (driver seven) leads to an enterprise value for operations; this can easily be translated into a value for equity. This technique is most effectively applied to individual business units within a company, whose separate values can be cumulated to arrive at the value of a business, or to create alternate scenarios.

We have introduced Rappaport’s drivers of value briefly here, but this is a very useful model, and you will see us refer to it over and again in this book. The model reflects the methodology underlying most corporate valuations. Furthermore, it is a useful way to explore sensitivity analysis (see Appendix 3) and to evaluate synergies in acquisitions (see Chapter 15).

WORKING INSIGHT 1.4

The seven drivers of value

1. Increase sales growth
2. Increase operating profit margin
3. Reduce cash tax rate
4. Reduce incremental investment in capital expenditure
5. Reduce investment in working capital
6. Increase time period of competitive advantage
7. Reduce cost of capital.

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Unlike the two metrics discussed below, SVA can be difficult to use as a one-period tool. Positive free cash flow in a period is not necessarily good; negative free cash flow may not be bad. The metric is mainly used for valuation and planning rather than as a periodic measure of performance.

**ECONOMIC PROFIT**

Economic profit (sometimes known as ‘residual income’) is a generic name that covers many of the different variants of profit-based measures of shareholder value. This is the surplus earned by a business in a period after deducting all expenses including the cost of capital. It can be calculated in two ways, as shown in Working insight 1.5.

Economic profit is primarily used for performance measurement. It has the advantage that it teaches managers a great respect for capital – it is no longer seen as ‘free’ – and encourages them to run their businesses so as to minimize capital employed. In many instances this behavioural change is beneficial to the business, although some would argue that EP is a single-period measure, and taking it to extremes can lead to capital-starved businesses, limiting growth.

There is of course a relationship between SVA and economic profit. It can be shown that the discounted value of the projected economic profits of a business for the appropriate time period will equate to the SVA. Perhaps more intuitively,

<table>
<thead>
<tr>
<th>Calculation of economic profit</th>
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</thead>
<tbody>
<tr>
<td>Operating profit after tax</td>
</tr>
<tr>
<td>Capital employed</td>
</tr>
<tr>
<td>Cost of capital</td>
</tr>
</tbody>
</table>

**Calculation 1**
- Operating profit after tax: 2,400
- Less: cost of capital (20,000 @ 10%): 2,000
- Economic profit: £400

**Calculation 2**
- Economic profit = Capital employed × Spread
- Spread = Return on Investment less Cost of Capital
- (where return on investment represents after-tax operating profit as a percentage of opening capital employed)
- Economic profit = 20,000(12% – 10%) = £400

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5 Economic profit is a generic version of Economic Value Added, EVA™, a measure promoted by the consultancy firm Stern Stewart. In EVA calculations, both the operating profit and the capital employed are adjusted to remove some of the adverse effects of accounting adjustments.
whereas SVA shows the value of a business over its lifetime, economic profit shows whether the company is creating a positive NPV in any single period.

**TOTAL SHAREHOLDER RETURN**

Both SVA and economic profit are ‘internal’ measures of shareholder value: in terms of the two-decision model introduced in Figure 1.2 they show how well the company is implementing its competitive strategy to create value from the product–market mix it selects. Total shareholder return (TSR) is an ‘external’ measure – it looks at the value created for shareholders, the top box in Figure 1.2.

TSR represents the total return to the shareholders in a period: the increase in share price, plus any dividends paid during the period (see Working insight 1.6). This performance measure is very commonly used in directors’ long-term incentive plans, often calculated over a three year period.

<table>
<thead>
<tr>
<th>Total shareholder return</th>
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</thead>
<tbody>
<tr>
<td>Share price at 1st January</td>
</tr>
<tr>
<td>Share price at 31st December</td>
</tr>
<tr>
<td>Capital gain in the year</td>
</tr>
<tr>
<td>Dividend paid in the year</td>
</tr>
<tr>
<td>Total return</td>
</tr>
<tr>
<td>Total Shareholder Return (TSR)</td>
</tr>
</tbody>
</table>

From the point of view of the shareholders, TSR is probably the most accurate measure of value – it shows exactly what they have received from the company in the period. However, as a measure of managers’ performance the metric has limitations. Share prices (as we will discuss in Chapter 2) reflect market expectations, rather than corporate performance. Adequate performance from a company expected to do poorly might increase share price far more than superb performance from one that was already a market favourite. A company could be doing well, but be in an out-of-favour sector and thus see its share price fall. Alternately, a poor company could see its price rise for reasons unconnected with underlying performance. When used as a measure of directors’ performance, TSR is generally benchmarked relative to similar companies, which helps eliminate some – but by no means all – of these difficulties.

**SOME REFLECTIONS ON SHAREHOLDER VALUE**

Earlier, we stated that shareholder value should properly reflect corporate value. It is now appropriate to explore that statement in more depth.

Figure 1.5 sets out the dimensions of a company’s value in a two-by-two matrix. Assume that you, as a very skilled financier, have calculated the exact price at which the company’s shares should trade (perhaps using Rappaport’s SVA
techniques). This is the fundamental value (FV) of the share. The value multiple on the vertical axis represents the actual market value (MV) divided by this fundamental value. If the share is trading at its fundamental value, this will be 1.0.

The horizontal axis of the matrix represents economic profit or any similar measure of ‘is this a good company?’ A positive economic profit implies a business that is doing well; negative economic profit indicates a poor business. (It should be noted that this last definition is quite restrictive as, in practice, a good business might make an economic loss if in any one year it were to invest heavily for the future, however, the principles hold.)

Our company can fall into any of the four segments shown in the matrix, labelled A to D for convenience. So, in which segment do you want to be?

We have asked this question of many different groups of MBA students and executives, with interesting results. Almost invariably the majority of respondents choose to be in segment B, a good company with a high share price over-valued by the markets. But there is always a minority that would prefer to be in C, and the occasional choice of A, or even D. Further questioning reveals that each of the different responses comes about because the respondents have, without consciously realizing it, taken on a different ‘persona’.

For a company situated in quadrants A or B, that is, with a value multiple greater than 1, the implication is that the market is over-valuing its shares. The only real issue then becomes: how long can we continue to fool the market? In practice, companies may remain overvalued for many years, but ultimately reality will catch up with them and the share price will fall. So, A or B are good positions to be in if you are about to sell your shares, but probably not otherwise. As managers about to exercise our share options we would like to see the company in B: we could sell the shares quickly, but still remain with a fundamentally good business. As outgoing managers we may have less interest in the strength of the business, so quadrant A would also be a reasonable place – provided that we can escape quickly with our money and reputation intact!

Undervalued companies, with a value multiple of less than 1, sit in quadrants C or D. Who would want their company to be undervalued? Well, those same managers who were happy to exercise their share options whilst sitting in
quadrant B might be very pleased to be granted those options whilst the company was sitting in C: they could make money on the share options simply by persuading the market to reassess its false view of the company’s prospects causing an automatic share price rise.

There is of course a danger to being in quadrant C or D. The company in C is a takeover target. It is a valuable asset, well run, and not appreciated by the market. Almost anyone could buy it at this undervalue, and make a profit. The company in D is less attractive: it is an undervalued asset but it is also under-performing. But to a predator in the same industry, who would know how to turn it around, it could be an attractive buy. And although as existing shareholders a position in C or D would fail to please us, as prospective shareholders, we might choose to buy into C or D in the hope that they attract a takeover which will return us a swift profit.

There are two key lessons to be learned from an analysis of the value matrix. The first is that the different groups of stakeholders have different interests in the company and its activities, and that these interests may conflict. The shareholder’s keen anticipation of a takeover may not be shared by the incumbent management who will lose their jobs. Prospective shareholders seek an undervalued company; existing shareholders want to sell on a high. This stakeholder analysis leads into agency theory, which exposes the different motivations of directors and shareholders. Both stakeholder analysis and agency theory are discussed later in this chapter.

The second key lesson is that in the long term there is only one place to be that is fair to all of the stakeholders, existing and prospective, and that is to be trading at the fundamental value; a company which is fairly valued by the market such that its share price reflects its worth. (We hope that it goes without saying that one would want the company to be on the right hand side of the matrix, in ‘good company’ territory.)

It is interesting to note that Warren Buffett, the legendary investor who runs Berkshire Hathaway, effectively states this in his ‘Owners’ Manual’ for shareholders. He sets out 13 principles, and adds a 14th: that the share price should accurately reflect, as far as possible, the fundamental (intrinsic) value of the company. Case Study 1.1 sets this out in full.

**REASONS THAT MARKET VALUE MIGHT DIFFER FROM FUNDAMENTAL VALUE**

Having stated that a company’s market value might (indeed, probably will) differ from its fundamental value, it is worth considering why this should be. One obvious reason is that the share price of a company reflects a view of its future prospects, and an asymmetry of information might lead the market to have different views to the executives and Board. Other possible reasons are given in Working insight 1.7.

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6 Before we lose your money by having you follow this investment strategy, we should point out that although in the long run the prices of shares in quadrants C or D will rise, this will only happen as the market reassesses its views of the company. In other words, you can make money by buying the whole of a company in quadrant C, but if you are just buying a small stake, value will only be realized once the market has reappraised the company.
22 Corporate Financial Strategy

Reasons for market value to diverge from fundamental value

- The company’s strategy, profitability or risk might not be communicated properly to the markets.
- Supply and demand for the share might be in imbalance. For example, if the company is included in the FTSE 100 index then some tracker funds will have to own it, thus boosting demand.
- Takeover expectations may raise the share price.
- For a share with low liquidity (i.e. few shares available for purchase), even small purchases or sales can increase volatility in pricing.
- Governance issues can influence perceptions of risk, and therefore price.
- Shares followed by few analysts can have greater volatility, as less information is available.
- The market sometimes applies a ‘conglomerate discount’ to groups containing companies with dissimilar activities.
- Behavioural finance issues such as Anchoring can explain some share price movements.

It should also be noted, as discussed in Chapter 15, that the share price reflects the price of the last trade, not the price at which the whole company could be acquired. Generally, the last trade reflects the transfer of only a small percentage of the company’s issued capital. Thus, there is no good theoretical reason why this market value should reflect the fundamental value – most of the shareholders chose not to sell at this price.
BEHAVIOURAL FINANCE

In the course of this book we are likely to make some assertions that appear illogical to the casual reader (although all are supported by evidence in companies and markets). The problem, we find, is that people do act illogically. Thus we welcome the growth in studies of behavioural finance (also known as behavioural economics), which discusses how and why people and markets experience irrational behaviour.

Aspects of the theories of behavioural finance are incorporated throughout the book, where appropriate, and some of the key propositions are set out in Appendix 3, which deals with forecasting.

WHO ARE THE SHAREHOLDERS?

We ought here to highlight a dilemma faced by the directors of many public companies. We speak in this book about creating value for ‘shareholders’, as if shareholders were an amorphous mass, who all had the same objectives and were interested in the long-term value of the company. Alas, this is no longer the case. Some shareholders will remain as owners of the shares for many years; others will do so for a matter of months, days or perhaps hours. Some will be content to wait for the business growth to be reflected in the share price; others may, through the judicious use of derivative contracts (see Chapter 12), have a vested interest in seeing the share price fall rather than rise.

Our interest in this book – and, we hope, the interest of those running our public companies – is in creating value on a sustainable basis for those who will hold the shares for a reasonable length of time.

OTHER STAKEHOLDERS

There are two issues to consider about stakeholders: who are the stakeholders of a company, and why does financial strategy seek to maximize shareholder value rather than the value to any other stakeholder group?

STAKEHOLDER GROUPS

There are many stakeholders who might have an interest in a company’s performance and may influence its activities, as illustrated in Figure 1.6.

Strategic business decisions are taken in the light of pressures from a host of internal and external stakeholders. As financial strategy must always be considered in the context of the overall business strategy, it can be subject to the influences of a wide range of potentially conflicting interests.

The degree of interest in, and influence on, any particular strategic decisions will vary dramatically for each stakeholder group. For example, the current legal position in the UK is that companies can configure their business operations as they choose, opening or closing business units to suit their strategies. However, this is not the case in continental Europe, as the UK retailer Marks & Spencer discovered when in spring 2001 it announced the closure of its Paris shops as a
way of saving money whilst the company was struggling. The French workers had significantly more union power and legal rights than their UK counterparts, and the closure was initially blocked.

Another example of stakeholder power came in 1995 when Shell, the global oil company, announced its decision to decommission its Brent Spar oil platform by sinking it in the Atlantic Ocean. Although it ultimately transpired that this disposal option was relatively environmentally friendly, concerted action by the environmental group Greenpeace, supported by boycotts by customers, led to a change of strategy on the disposal, and to the rig being towed to Norway for dismantling, a much more expensive option for the company.

The stakeholder relationships between the company and its lenders and shareholders may also change over time. Although the shareholders own the company, lenders often have rights under banking covenants. Accordingly, at times of financial pressure a company might find the lenders rather than the shareholders in the driving seat, dictating its actions.
PRIMACY OF THE SHAREHOLDERS

It would be possible to find examples of stakeholder power for each of the groups set out in Figure 1.6. This being the case, why does financial theory (and Anglo-American financial practice) dictate that shareholder value is the appropriate corporate aim? There are various responses given to this question, for example that the shareholders are the owners of the company, or that it needs to keep them satisfied in order to protect access to future funds. The answer that we find most persuasive is that the shareholders are the only direct stakeholder group who do not have a contractual relationship with the company.

A supplier of the company will supply product and will receive payment in return. A customer will hand over money and receive the agreed goods or services. Employees know that if they give the specified number of labour hours they will receive an agreed wage at the end of the week or month. Lenders receive interest, governments collect tax. Each of the stakeholders knows what their relationship with the company will produce. Shareholders on the other hand invest their money in the hope of receiving dividends and capital gains, in order to make an above-market return. However, there is no requirement for the directors to declare a dividend, and there is no guarantee that the share price will rise to produce a gain. Accordingly, shareholders are bearing the ultimate risk, and so the company (and its directors) has an obligation to play fair with them by managing its activities to create value for this group of stakeholders.

The fact that creating long-term shareholder value is seen as the most important task of the company does not mean that creating value for other stakeholders is unimportant. If a business neglects customer value it will soon not have any customers; poor treatment of employees will lead to them leaving, denuding the company of their skills; neglecting broader concerns such as environmental or human rights issues can lead to consumer protest, as demonstrated with Shell over Brent Spar or with the ongoing anti-globalization campaigns against high-profile companies for their sourcing practices in under-developed countries. All of these constituencies are important to a company, but the long-term shareholder interest has the highest priority.

This common-sense practice has been incorporated into the UK’s Companies Act 2006, which reflects the principles of enlightened shareholder value, and states that the directors should work to promote the success of the company for the benefit of the shareholders, having regard to the interest of other stakeholders. (The problem with this, as with many aspects of stakeholder analysis, is that the Act gives no guidance as to how to prioritize if the interests of two groups of stakeholders conflict. This is another good reason to set the interests of shareholders above others – it helps to determine priorities.)

We consider the position of stakeholders again, when we look in Chapter 5 at the financial strategy implications of corporate governance.

AGENCY THEORY

Agency theory is discussed further in Chapters 5 and 6, but it is appropriate to explain its key propositions at this stage, as it informs the discussion at several stages in this book.
In public companies (although not necessarily in private ones) the directors, who run the business, are different people from the shareholders, who own it. The directors (agents) are meant to run the business for the benefit of the shareholders (principals). However, in practice conflicts of interest are likely to arise, as generally the directors will own few if any of the shares of the company, and so receive their reward (pay) by different means than do the shareholders (dividends and capital gains). This means that directors may not act in the best interests of shareholders at all times. Examples of possible conflicts of interest include:

- payment of excessive salaries or benefits,
- reluctance to undertake high-risk, high NPV projects: if these are successful the shareholders make the gain; if unsuccessful the shareholders will lose only a small part of their diversified portfolios, but the managers may lose their jobs,
- retaining profits rather than paying them out in dividends, to protect the company from any financial risk,
- working less efficiently than the shareholders might desire.

Agency theory suggests that the shareholders should have means to monitor what the directors are doing, or to develop contractual arrangements which encourage mutuality of interest. Performance-based remuneration contracts, discussed in Chapter 6, are a prime example of this.

If agency theory contracts and monitoring measures are put into operation effectively, it should be impossible for managers to act other than in the best interests of their principals, the shareholders. These shareholders should utilize their ownership power to force managers to behave in accordance with their wishes. Their ultimate sanction is in their power to sack the management team, either directly or by selling their shares in the company to new owners, who then change the top management.

**THE IMPORTANCE OF ACCOUNTING RESULTS**

We have established (to our satisfaction at least) that corporate value is created by increasing the discounted value of future cash flows. We could also cite you years of academic research that shows that manipulation of accounting policies is ignored by the market, which sees through the final profit figures to the health of the underlying business. However, we also note that companies and their advisors appear to be obsessed with accounting results and, in particular, earnings per share (eps), the profit earned in a year for each ordinary share.

As a significant part of this book discusses how companies can use financial strategy to manipulate eps, we feel obliged to defend our position on this matter. We believe that eps is, in practice, important; our academic colleagues insist that markets ignore accounting practices – who is right? In our defence we cite a recent example of how changes to accounting practices influenced corporate practice.
Theory tells us that cash flow is what matters in company valuation. However, the reported actions of finance directors and the investment community indicate that it may be some time before we can structure transactions ignoring the effects of eps movements.

**KEY MESSAGES**

- Financial strategy concerns how companies raise and deploy their funds.
- The investors’ required return can be mapped against their perceived risk. Delivering value for shareholders – which is the main objective of a company – means giving them an above-the-line return.
- A company can be valued by discounting its expected future cash flows at an appropriate cost of capital. Value arises from creating competitive advantage through successful business strategy, in combination with a successful financial strategy, to increase those cash flows and reduce the cost of capital.
- Markets are not perfect nor totally efficient. Often, they are not rational. Companies and investors can create value in the market imperfections.
- Ideally, a company’s market value should reflect its fundamental value. If this is not the case, one or more groups of stakeholders will suffer.
- Agency theory, which discusses the difference in objectives between managers and owners, can be used to explain many aspects of corporate finance.
- Stakeholder management is an important part of long-term shareholder value creation.
- Although accounting results are not necessarily an indicator of shareholder value, companies spend much time and effort on ensuring that the accounting results look good, sometimes to the detriment of value.

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7 Characteristics of different financial instruments are discussed in Chapters 11 and 12.
KEY TERMS IN THIS CHAPTER

Agency theory
Behavioural finance
Competitive advantage
Corporate value
Discounted cash flow (DCF)
Economic profit
Enlightened shareholder value
Financial strategy
Fundamental value
Investor value
Net present value (NPV)
Risk
Shareholder value
Shareholder value analysis (SVA)
Stakeholders
Total shareholder return (TSR)
Two-stage investment process
Value drivers
Value matrix
What does the share price tell us?

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A company’s business and financial strategies must operate in tandem to deliver the value demanded by its shareholders. In order to accomplish this, it is useful for its directors and advisors to understand how the shareholders expect to achieve that value; in this chapter we demonstrate these expectations using the price/earnings (P/E) ratio.

A company’s P/E ratio is the ratio of its current share price to its earnings per share (eps). The ratio is an indicator of the growth that the market expects from the share: a low P/E ratio reflects low growth expectations, and a high P/E implies that the company will need to deliver correspondingly high growth to satisfy those expectations. Thus, although directors often see a high P/E as a ‘virility symbol’ for their companies, it could instead be looked at as a treadmill – the higher the P/E, the harder they have to work to achieve the implied growth.

The P/E ratio also reflects the risk that the market perceives in the share – a higher level of risk reduces the share price and thus the P/E.

Two methods of calculating the growth implicit in a P/E are demonstrated in this chapter. The first uses a simple dividend growth model (DGM); the second introduces a more sophisticated model which brings in the concept of ‘steady state’.

A company in steady state is one which is neither growing nor reducing in size, and which remains at this constant level to infinity. (As you can see, steady state is an abstract concept, useful in theory but with no place in reality.) Such a company will have a lower cost of equity than a corresponding ‘real world’ company, as the volatility that comes from growth has been eliminated.

For a company in steady state, the dividend payout ratio will be 100%, as there will be no point in retaining funds for growth. With dividends equivalent to the (unchanging) eps being paid out every year, the shares can be valued as perpetuities by dividing the eps by the steady state cost of equity. This relationship can be rearranged to derive a ‘steady state’ P/E, which is almost certainly considerably lower than the P/E at which the company trades. Comparisons between the two can enable the analyst to derive the present value of growth opportunities (PVGO) – the proportion of the current share price which reflects the market’s expectations of future growth and development.

The steady state relationship can also be used to show by how much eps needs to be increased in order to achieve the share price growth implicit in the current value.

The P/E ratio for a company is determined by dividing its current share price by its latest eps.

Thus \( \frac{\text{share price}}{\text{eps}} = P/E \).

This equation can be rearranged, and so-doing explains, at least partially, a popular misconception about share prices.
If \( P/E = \frac{\text{share price}}{\text{eps}} \) \hfill (2.1)

Then

\[
\text{Share price} = P/E \times \text{eps} \hfill (2.2)
\]

So far, there is no problem with this rearrangement. The problem arises when individuals – often with an apparently sophisticated knowledge of finance – assume that this second equation implies a causality: that the share price is a function of \( P/E \) and eps rather than \( P/E \) being itself a function of the share price. Why does this matter? Well, if directors believe this causality, they could come to the conclusion that in order to increase the share price, all that needs to be done is to increase the eps. Under this logic, the \( P/E \) of the company will remain unchanged, so any increase in eps will translate directly into a higher price. Such reasoning is at least partially to blame for the unnatural focus on eps discussed in Chapter 1. However, as we shall see in this chapter, the \( P/E \) is complex and unlikely to remain constant over a period.

**WHAT DOES THE P/E RATIO MEAN?**

A company’s \( P/E \) ratio firstly reflects the market’s perceptions of its future eps growth, as illustrated in Figure 2.1.

Figure 2.1 shows two companies. High plc is a company with a high \( P/E \) ratio; Low plc, amazingly enough, has a low \( P/E \) ratio. At the time of analysis, both companies have the same level of eps. However, the markets believe that High will grow eps rapidly over a period, and so give it a high \( P/E \) rating. They cannot foresee such rapid growth prospects for Low, hence its low multiple.
Before we examine the mathematics behind the illustration in Figure 2.1, it is important to note that the P/E multiple for a company reflects the expected future growth in eps which is already incorporated into the share price. Hence the share price will only move due to changes in this expected growth, or if the actual performance shows greater or lower growth than has already been paid for by current investors in the existing share price. Merely achieving some growth in eps is no guarantee of a rising share price; particularly for a high P/E company.

An exposition of some of the key points in financial theory is set out in Appendix 1. However, in order to explain the meaning of the P/E ratio we need at this point to introduce one of the underlying theoretical models, the dividend growth model\(^1\). This, very broadly, sets out the shareholders’ required return on their investment in terms of the ways in which it is achieved, a mixture of dividend yield and capital gain.

**ONE EXPLANATION: USING THE DGM WITHOUT ALTERATION**

The DGM states that:

\[
K_e = \frac{D_1}{P} + g \tag{2.3}
\]

Where \(K_e\) is the cost of equity (the shareholders’ required return); \(D_1\) is the prospective dividend; \(P\) is the current share price; and \(g\) is the anticipated growth rate.

Equation 2.3 states\(^2\):

- Shareholders’ required return = dividend yield plus capital growth

Equation 2.3 can be rewritten, to give:

\[
P = \frac{D_1 \times 1}{(K_e - g)} \tag{2.4}
\]

We can take the relationship expressed in equation 2.4 and analyse it in two separate ways. For the first of these, we divide each side of the equation by the eps. Thus:

\[
P/\text{eps} = \frac{D_1/\text{eps} \times 1}{(K_e - g)} \tag{2.5}
\]

The left hand side of this equation, \(P/\text{eps}\), is our P/E ratio. The right hand side contains two expressions of which one, \(D_1/\text{eps}\), represents the prospective payout ratio. Thus, equation 2.5 states:

\[
P/E \text{ ratio} = \text{payout ratio} \times \frac{1}{(K_e - g)}
\]

Given this relationship, an analyst (or indeed, the directors of the company) can feed in estimates of the company’s cost of equity (\(K_e\)), its prospective

---

1 Also known as the dividend discount model and as the Gordon growth model.
2 Yes, we know that this is only an approximation of what the equation states, but it is a useful approximation and serves our purpose well.
What does the share price tell us?

dividends and its growth prospects, and determine the P/E ratio at which the company should be trading. Alternately – and often far more significantly – they can analyse the existing P/E ratio (a known number) and payout ratio (a known number) and cost of equity (Appendix 1 explains how to calculate this) to determine what level of growth the market expects. Working insight 2.1 gives an example of such a calculation.

**THE P/E RATIO AND RISK**

Now it is a good time to mention the second aspect of the P/E ratio. Not only does it reflect the market’s views of the company’s growth prospects, it also indicates the market’s views of its risk profile. Equation 2.5 was rewritten to show that:

\[
\text{P/E ratio} = \frac{\text{payout ratio} \times 1}{(K_e - g)}
\]

This means that the P/E ratio is affected both by the forecast growth (g) and also by the cost of equity (K_e). If g rises, the P/E goes up. But if K_e rises, the P/E goes down. To put it in another way, if the market perception of the company’s risk increases, the discounted value of its future cash flows will be lower, and thus its price will fall; this being the case, it will trade on a lower P/E ratio. This is an important relationship to remember: an increase in the eps which was driven by taking on excessive risk could actually cause the share price (and the P/E ratio) to fall rather than rise.
The P/E Ratio and Dividends

One further misconception that follows from equation 2.5 is that the dividend payout ratio can be used to manipulate the share price. Look again at the equation:

\[ \frac{P}{\text{eps}} = \frac{D_1}{\text{eps}} \times \frac{1}{(K_e - g)} \]

At first sight, it might appear that the P/E ratio – and thus the share price – could be increased merely by increasing the dividend payout ratio; paying a higher percentage of profits out to the shareholders would have a direct impact on prices. This argument is flawed. The company generates funds which can be used either to pay out dividends or to reinvest in the future growth of the business. If the company were to increase the dividend payout ratio, fewer funds would be available for reinvestment and so (presumably) future growth would be less than otherwise anticipated. Thus, although the function \( \frac{D_1}{\text{eps}} \) in equation 2.5 would increase, the denominator \((K_e - g)\) would also increase as \(g\) fell. Accordingly, there is not necessarily a simple arithmetical relationship between changes in the dividend payout ratio and changes in the share price.

There are several different methods of demonstrating what the P/E ratio means in terms of corporate growth, and generally they arrive at different answers, depending on the assumptions made. We have set out this simplistic technique as an illustration of what can be done. However, the slightly more sophisticated technique that follows is the one to be used in the rest of this book.

A Second Explanation: Introducing ‘Steady State’

In Chapter 4 we will discuss a ‘life cycle’ model which demonstrates that products move from launch to growth to a mature and ultimately to a decline phase. It shows that at the launch stage the company’s sales, profitability, and cash generation are all in its future; as the product matures, some of this potential is realized, and so the growth prospects decline. Figure 2.2 sets out the basic S curve on which this is based.
What does the share price tell us?

We can use this model in conjunction with a conceptual model of what we call a ‘steady state’ company. In steady state a company has a growth rate of zero. (It must be emphasized that steady state is a theoretical state; the model is developed in order to build up an argument – in practice there is no such animal as a company in steady state, as even mature companies always have an element of growth or decline.)

In order to define steady state we have to make two main assumptions, necessary in order to maintain over time the constant real levels of profit which are essential to the only rational financial definition of ‘steady state’. First, depreciation would need to be based on true replacement cost accounting and the annual depreciation expense would have to be reinvested in the business; if this were done the business would be capable of producing the same physical level of output over time. Second, all of the constant real profits achieved after charging this replacement cost depreciation must be paid out as dividends. If any of the profits were reinvested the business should grow, whereas if the dividends paid out were greater than the profits earned the business would get smaller over time; therefore, a 100% dividend payout ratio is essential. (Obviously there are some other more general assumptions required such as either the absence of inflation, or the maintenance of real net profit margins and a neutral influence on net working capital.)

The result of these assumptions is that we can determine both a company’s P/E and its cost of equity at steady state, as shown in Working insight 2.2. Either of these can be used in a valuation.

As can be seen from Working insight 2.2, for a steady state company the appropriate P/E multiple equals the inverse of the company’s cost of equity capital (\(K_{eq}\)). It cannot be emphasized too greatly that this relationship only holds for a steady state company. For a growth company, the P/E multiple will be greater than this inverse of the cost of equity capital, whereas for a declining company the P/E multiple would be lower, reflecting the expected decline in the future potential stream of earnings and dividends. Hence this very simple relationship provides a very powerful reference base for assessing both the risk profile and the future expectations signalled by any P/E multiple given to a company by the financial markets. It must be remembered that, in reality, the P/E multiple is mathematically calculated by dividing the share price by the current or expected eps, rather than the computation being the other way round; hence it is more correct to say that the share price drives the P/E multiple.

How can this relationship be used to analyse the P/E ratio (and thus the share price) of a company? To do this, we have to consider what the risk profile of the company might look like in this mythical steady state.

We know from Chapter 1 that the return required by investors bears a direct relationship to the perceived risk they are taking. Thus investors in high-risk companies demand a high return; as risk reduces so does that required return. Risk, to a financier, is the volatility of expected returns: by definition in steady state the results of the company will be stable, so there is less risk (although overall market risk will still affect the business). Accordingly, the cost of equity should be lower for a company in steady state than for a growth company. So if we know the current cost of equity, we can establish that the steady state cost of equity, \(K_{ess}\), is lower than this figure.
Valuation of a steady state company

The DGM was set out in equation (2.4) as:

\[ P = D_1 \times \frac{1}{(K_e - g)} \]

As shown in Appendix 1, the derivation of this equation is that the share price reflects the discounted value of all future dividends to be received by the shareholder. Dividends are forecast to grow at the rate \( g \), and the discount rate applied is the shareholders’ cost of equity, \( K_e \).

Thus, the DGM is derived from solving the progression:

\[ P = \left\{ D_1 \div (1 + K_e) \right\} + \left\{ D_2 \div (1 + K_e)^2 \right\} + \left\{ D_3 \div (1 + K_e)^3 \right\} + \cdots + \left\{ D_t \div (1 + K_e)^t \right\} \]  

(2.6)

But for a steady state company, defined as having zero growth, the dividend stream will be constant. This means that:

\[ D_1 = D_2 = D_3 \ldots = D_t \]

Thus the shareholder’s income stream is a perpetuity of the dividend payment. Furthermore, as there is no requirement for reinvestment, the payout ratio will be 100%. Therefore dividends will equal eps. Thus the income stream that the shareholder receives will be a perpetuity of the company’s eps.

Thus for a steady state company equation (2.6) can be simplified to:

\[ P = \text{eps} \div K_e \]  

(2.7)

Dividing through by eps gives:

\[ \frac{P}{E} = 1 \div K_e \]  

(2.8)

Again, we emphasize that this relationship only holds at the theoretical point of steady state. Accordingly, we rewrite equation 2.8 as:

\[ \frac{P}{E_{SS}} = 1 \div K_{e_{SS}} \]  

(2.9)

The steady state cost of equity will be driven, using the Capital Asset Pricing Model (CAPM) described in Appendix 1, by the risk free interest rate, the market premium, and the company’s beta:

\[ K_e = R_f + \beta \ (R_m - R_f) \]  

(2.10)

As neither the risk free rate nor the market premium will be affected by a company moving into steady state, the only variable to change will be the company’s beta. Accordingly, at steady state, equation 2.10 may be expressed as:

\[ K_{e_{SS}} = R_f + \beta_{SS} \ (R_m - R_f) \]  

(2.11)

Where \( \beta_{SS} \) must be lower than the company’s current beta.
What does the share price tell us?

It should be noted that although $\beta_{ss}$ will be lower than the company’s current beta, it need not be 1.0. A beta of 1.0 implies a company whose risk exactly mirrors that of the market as a whole. Although our steady state company has shed all of its volatility due to growth, it will still reflect the volatility of its industry. For example, a construction company will always reflect the economic cycle even if it is not growing over the cycle; it will inherently have a beta higher than, say, a water company.

Working insight 2.2 set out the theory behind the steady state model of P/E ratios. Working insight 2.3 applies this theory to the numbers for Expansion plc.

As explained in Figure 2.1, it is useful to think of the P/E multiple as being a signalling device by current and prospective shareholders (the capital market) to the company, giving a clear indication of their expectations regarding growth in eps, adjusted for risk. High P/Es indicate high growth expectations; low P/Es indicate an expectation of little growth, or high perceived risk. These signals can be compared to the signals sent out by the company’s managers to the financial markets regarding their own views on future growth prospects, which will be considered further in Chapter 4 and throughout the book.

One of the problems encountered in the financial strategies of major publicly quoted companies is that senior managers, and especially chief executives and chairmen, do not seem to accept the inevitability of a declining P/E multiple as

---

**An estimate of expected share price using the steady state model**

Expansion plc has a share price of 250 p. Its eps are 10 p, out of which it is expected to pay a dividend of 2 p per share. The cost of equity has been calculated at 10%, based on a risk free rate of 4%, a market premium of 5%, and a beta of 1.2.

In this example we assume that the industry in which Expansion operates carries an inherent level of risk, such that the steady state beta will be 1.1 (i.e. lower than the current beta but higher than 1.0).

Therefore, using the CAPM per equation (2.11), the steady state cost of equity will be:

$$K_{ess} = R_f + \beta_{ss} (R_m - R_f)$$

$$K_{ess} = 4\% + 1.1 \times 5\% = 9.5\%$$

On this basis, the P/E ratio of the company at steady state will be, per equation (2.9):

$$P/E_{SS} = 1 / K_{ess}$$

$$P/E_{SS} = 1 / 9.5\% = 10.526 \text{ times}$$

(The steady state P/E has been shown to three decimal places solely to facilitate later explanations.)

---

It should be noted that although $\beta_{ss}$ will be lower than the company’s current beta, it need not be 1.0. A beta of 1.0 implies a company whose risk exactly mirrors that of the market as a whole. Although our steady state company has shed all of its volatility due to growth, it will still reflect the volatility of its industry. For example, a construction company will always reflect the economic cycle even if it is not growing over the cycle; it will inherently have a beta higher than, say, a water company.

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As explained in Figure 2.1, it is useful to think of the P/E multiple as being a signalling device by current and prospective shareholders (the capital market) to the company, giving a clear indication of their expectations regarding growth in eps, adjusted for risk. High P/Es indicate high growth expectations; low P/Es indicate an expectation of little growth, or high perceived risk. These signals can be compared to the signals sent out by the company’s managers to the financial markets regarding their own views on future growth prospects, which will be considered further in Chapter 4 and throughout the book.

One of the problems encountered in the financial strategies of major publicly quoted companies is that senior managers, and especially chief executives and chairmen, do not seem to accept the inevitability of a declining P/E multiple as
their company matures. This overwhelming desire to maintain over time, if not to increase, an already high P/E multiple can become the dominant driver of the corporate and competitive strategy of the business, often leading the company to diversify into new areas of potential growth even though the organization has absolutely no competitive advantage in this new sector.

Looking at this problem with a financier’s hat on, we can see that if the company chases growth by diversifying into non-related activities, in which it has no competitive advantage, this is likely to increase its risk profile. Increasing the risk profile will, if the market understand what is going on, reduce the share price and thus the P/E ratio.

### GROWTH INCLUDED IN THE SHARE PRICE

Consider the mythical steady state company. Its profits are the same year after year; its dividends represent a 100% payout of these profits. A stream of income that is the same year after year into the infinite future is a perpetuity, and its value can be easily calculated. Working insight 2.4 shows the value of a company in steady state.

If we know the value of a company at steady state, we can compare this with the current market value to determine how much growth the market is pricing into the share. The easiest way to explain this is by means of an example, and Working insight 2.5 returns to Expansion plc to illustrate.

The implication of the calculations in Working insight 2.5 is that if Expansion were to announce to the market that the directors see no further prospects of growth and it has become a steady state company, its share price would drop to about 105 p from the current level of 250 p. Thus we can say that 145 p of the current share price, that is, almost 60% of the value of the share, represents growth anticipated by the market.

This is a fundamental point to appreciate in understanding how shareholder value is created. Most of the share price relates to activities that the company has not yet achieved. Only 40% of Expansion’s share price is justified on its current earnings; the rest represents the PVGO which the market assumes that the management can generate.

#### WORKING INSIGHT 2.4

**Steady state value of a company**

Let the annual (constant) dividend paid to shareholders be \( D \)

Shareholders’ cost of capital is \( K_e \)

Therefore, the value of the company is \( \frac{D}{K_e} \)

---

3 Occasionally one finds a company whose PVGO is negative, that is, the share price is lower than the perpetuity value of current eps. This could imply that the market expects profits to fall, or that it perceives the risks as very high. Or it could just mean the share is under-priced. The reverse is true for loss-making companies or those operating at breakeven: either the calculation assumptions need to be revisited, or the market is anticipating significant increases in profitability.
At this point, as we are considering a company’s need for growth, it is useful to bring in one of the classic models in strategy, The Ansoff matrix⁴ (Figure 2.3).

Igor Ansoff’s simple, but very powerful insight was that growth can come in four ways. A company can sell more of the same product to the same market

### Working Insight 2.5

**Growth inherent in the share price**

Expansion plc has a share price of 250 p and eps of 10 p. Its current cost of equity is 10%, but we have established (Working insight 2.3) that its steady state cost of equity is about 9.5%.

If Expansion were to become overnight a steady state company, the income stream of 10 p per share would continue effectively forever and would be paid out as dividend. Thus the steady state share price of the company, using the perpetuity formula is:

\[
P = \frac{D}{K_e} = \frac{10}{0.095} = 105.26 \text{ p}
\]

Looked at another way, the share price at steady state would be the eps at steady state multiplied by the P/E ratio at steady state

\[
P = \text{eps} \times \frac{P}{E} = 10 \times 10.526 = 105.26 \text{ p}
\]

---

(quadrant 1), it can sell new products into the same markets (2), existing products into new markets (3), or it can take the high-risk strategy of diversifying totally (4).

The directors of a company can use the Ansoff matrix in conjunction with their PVGO analysis to analyse how the company can achieve the growth implicit in its current share price. Figure 2.4 illustrates this.

In Figure 2.4 the left axis of the graph represents the eps and the right axis represents the share price. If the company continues to make its current eps, E₁, then it will only be worth a price of P₀, representing the perpetuity value of E₁. In order to justify the current share price of P₁ the company has to increase earnings to reflect the PVGO. The increase in earnings will come, depending on the company’s strategy and prospects, from developing its products and/or markets, with different associated levels of risk.

Should the management fail to generate growth that meets the market’s expectations, the company’s value will fall, reflecting the lower growth. Thus although a high P/E ratio, which implies high market expectations of growth, is seen by many as a sign of a strong company, it is also in some ways a curse for management: the more the market believes they can achieve, the faster they have to grow to justify the rating. (Ultimately, of course, most companies fail to meet the ever-increasing market expectations, and the share price is re-based to something more realistic. This makes perfect financial sense, but is understandably traumatic for the management and shareholders at the time.)
PVGO AND GROWTH EXPECTATIONS

The mathematics underlying the growth expectations in share prices can be taken one stage further, to consider the compound annual growth that a company needs to deliver in order to achieve the value for which shareholders have paid by buying its shares.

As a simple illustration, let us look once again at Expansion plc. Let us assume (on a totally arbitrary basis) that the company will reach steady state in 10 years’ time. Working insight 2.6 demonstrates the consequences of this.

Working insight 2.6 makes some heroic assumptions about the future for Expansion plc, and draws some interesting conclusions. Let us firstly examine the conclusions.

1. If the P/E ratio of the company is going to fall, the rate of growth in eps must exceed the required rate of growth in the share price.
2. For the share price to reflect a fair value for the company, the directors must understand the high level of eps growth anticipated by the market, and have a strategy in place to achieve this.

Working insight 2.6

Growth in eps required as the company falls to steady state

Expansion plc has a share price of 250 p. Its eps is 10 p, out of which it is expected to pay a dividend of 2 p per share. The current cost of equity has been calculated at 10%. The steady state cost of equity is 9.5%, giving a P/E at steady state of 10.5 times.

Shareholders require a return of 10% on their investment. The dividend yield for Expansion is 0.8% (2 / 250), which implies that they expect a 9.2% per annum cumulative capital gain.

If the P/E multiple were to remain constant over the company’s life, a 9.2% per annum capital gain would equate to a growth in eps of 9.2% per annum.

However, if Expansion falls to steady state in 10 years:

<table>
<thead>
<tr>
<th>Year</th>
<th>Share price</th>
<th>P/E</th>
<th>eps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 0</td>
<td>250 p</td>
<td>25</td>
<td>10 p</td>
</tr>
<tr>
<td></td>
<td>Compound growth of 9.2% per annum</td>
<td>Falls to steady state over 10 years</td>
<td></td>
</tr>
<tr>
<td>Year 10</td>
<td>603 p</td>
<td>10.5</td>
<td>57.4 p</td>
</tr>
</tbody>
</table>

Year 10 is calculated as the eps required to generate a share price of 603 p at a P/E of 10.5.

Thus, to increase the share price by 9.2% per annum over the period, eps has to grow at a compound rate of 19%.
The assumptions behind Working insight 2.6 are of course unrealistic. We are
assuming that (1) the company will reach steady state; and (2) that it will do
so in 10 years. As we have stated earlier, steady state is a concept that does not
actually exist, hence assumption (1) is false. And assumption (2) is somewhat
arbitrary – see what happens to the required growth if instead you substitute
a period of 5 or 15 years. (A further unrealistic assumption, although one that
is slightly more esoteric, is that the required growth in share price remains at
9.2%, which takes no account of either the reduced risk of the company over
the period or changes to its dividend yield over the period. Remember, we’re
dealing here with illustrative concepts, not facts to be taken literally.)

If we relax the key assumptions in Working insight 2.6 we can obtain a more
realistic analysis. The company will not fall to steady state. However, the logic
of a falling P/E still holds. Working insight 2.7 indicates the growth in eps
required should the P/E fall to say 20 in 7 years’ time.

It can thus be seen that any drop in the P/E will have a potentially significant
effect on the company’s growth requirements over the period.

It must further be remembered that achieving the growth illustrated in
Working insight 2.7 is, from the shareholders’ point of view, no big deal. Based
on these assumptions, a shareholder buying today at 250 p expects a price
of 463 p in 7 years’ time. Achieving this delivers a return exactly in line with
the market which, as we established in Chapter 1, neither adds to nor reduces
shareholder value. Shareholder value will only be created if the company beats
this growth target.

**WORKING INSIGHT 2.7**

**Growth in eps required for a drop in P/E ratio**

If Expansion’s P/E of 25 drops to 20 in 7 years’ time, all other matters remaining
the same, shareholders require a return of 10% on their investment. The dividend
yield for Expansion is 0.8%, which implies that they expect a 9.2% per annum
cumulative capital gain.

<table>
<thead>
<tr>
<th>Year</th>
<th>Share price</th>
<th>=</th>
<th>P/E</th>
<th>×</th>
<th>Eps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 0</td>
<td>250 p</td>
<td>=</td>
<td>25</td>
<td>×</td>
<td>10p</td>
</tr>
</tbody>
</table>

- Compound growth of 9.2% per annum
- Falls to 20 as per assumption

Year 7 is calculated as the eps required to generate a share price of 463 p at a
P/E of 20

Year 7 463 p = 20 × 23.1 p

Thus, to increase the share price by 9.2% per annum over the period, eps has to
grow at a compound rate of just under 13%.
KEY MESSAGES

- A company’s share price reflects the market’s risk-adjusted expectations of its future performance; the higher the share price relative to current earnings (as measured by the P/E ratio), the harder the management will have to work to achieve the growth inherent in the share price.
- One way of calculating the expected growth uses the DGM.
- Merely achieving the growth inherent in the share price does not generate shareholder value; value is created when the growth requirement is exceeded.
- Because companies cannot grow at a high rate forever, P/E ratios will reduce over time. This means that eps growth has to exceed the required share price growth.
- Steady state – a theoretical concept – can be used to calculate what the company’s share price would be if it were to remain at the same profit level forever. The difference between the current share price and the steady state price reflects the PVGO.

KEY TERMS IN THIS CHAPTER

- CAPM (Capital Asset Pricing Model)
- Cost of equity (K_c)
- Dividend growth model (DGM)
- Earnings per share (eps)
- Life cycle
- Present value of growth opportunities (PVGO)
- Price/earnings ratio (P/E)
- Steady state
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OVERVIEW

This chapter provides an executive summary of the core model set out in Chapter 4, which links corporate and financial strategies.

Chapter 4 is the longest chapter in the book. The model it describes underlies much of our thinking, and we felt it important to explain it fully. Any theoretical model is only a partial representation of reality, and we always encourage our students and clients to treat models cautiously – use them when they make sense, and change them to suit the circumstances. But to make meaningful adaptations, you need to understand the thinking behind the model, to know what to change – hence we spend a lot of time explaining this in the next chapter. However, we do appreciate that this makes the length rather daunting, so this piece exists for the more dauntable of our readers, so that you can get a quick look-see as to what we are saying.

In this chapter we set out an executive summary of the core model underlying much of the rest of this book. Reading this chapter is sufficient to give you a good view of what the model is, but not necessarily why it is.

THE FOUR DECISIONS IN FINANCIAL STRATEGY

Financial strategy is about the choices a company makes in raising and deploying its finances. There are four strategic decisions to be made:

1. How large should the asset base be?
2. How much of the finance should be debt, and how much in equity?
3. How much profit should be paid out in dividend, and how much retained?
4. Should new equity be issued?

An understanding of how shareholder value is created can help answer all of these questions.

BALANCING BUSINESS AND FINANCIAL RISK

The basic principle is really simple. Businesses need to take risk – without risk there is no opportunity and no reward. But taking too much risk can destroy the organisation. Risk comes from business activities as well as financial strategy, and therefore the decision on how much financial risk to take will depend fundamentally on the characteristics of the business. Figure 3.1 illustrates this.

Figure 3.1 shows that a combination of high business risk and high financial risk (i.e. borrowing too much) would be foolhardy and is not recommended: Quadrant 2 is to be avoided. Likewise, in most circumstances, Quadrant 3 is to be avoided: low-risk businesses could and should reduce their cost of capital by taking on more borrowing. Quadrants 1 and 4 are both good places to be, balancing the business and financial risks.
In order to evaluate business risk we use a model based on the product life cycle, adapting it to companies and their divisions. The basic life cycle model was shown in Chapter 2, and shows how sales change as a company develops. The model is expanded upon in Figure 3.2.

Figure 3.2 represents the annual levels of sales, profits and cash flows in a typical business over its life cycle. In its early life it is likely to be loss-making.
Executive summary: Linking corporate and financial strategies

and cash negative. As it goes through the growth stage, it will turn profitable, but could still be cash negative due to the required investment in working capital and fixed assets, needed to support this rapid growth. It is only when the business becomes mature that the cash flows reflect the profitability. Once the business goes into managed decline, sales fall, as do profits. In this stage, cash flows will remain positive, as little ongoing investment is needed.

DEBT OR EQUITY? INTEGRATING BUSINESS RISK AND THE LIFE CYCLE MODEL TO DEVELOP A FINANCING STRATEGY

Early-stage businesses are risky, as there are too many unknowns. This being the case, it would be foolish to attempt to finance them with debt, which would both increase their overall risk, and lead to outflows of cash from companies that are already cash negative. Thus, businesses at the launch stage should be financed with equity that is prepared to accept a high risk, such as venture capital.

At the growth stage, the business is still risky: managing rapid growth is hard work, and many companies fail to make the transition successfully. Accordingly, debt is generally not a good idea for growth companies either – their finance should mostly be equity, often taken from the capital markets. However, once the business has stabilized and reached maturity, its business risk reduces. At this point it can – and should – reduce its overall cost of capital by taking on cheap debt to replace the expensive equity. And once the business goes into managed decline, its risk (the volatility of expected results) is low – we know what is going to happen – and so the financial risk can increase and the company should borrow.

DIVIDEND STRATEGY OVER THE LIFE CYCLE

An early-stage company would be foolish to pay dividends to its shareholders, always assuming it even has the profits out of which to declare a dividend. Firstly, it needs its money as a buffer against the risks it faces. Secondly, it is cash negative, so any cash paid out to shareholders would only have to be replaced by having them invest more equity, which would be a particularly pointless exercise. And the third reason why such a company should not pay dividends is that its growth prospects are exciting, and the investors stand to make more money by reinvesting in that business than they would by taking their money out by way of dividend.

Similar arguments apply to many growth companies, which often pay no dividends. However, in some cases the arguments against a growth company paying dividends are tempered by a desire to give a little something back to the investors, as a signal of better things to come. Accordingly, some growth companies will make a nominal dividend payout.

Mature companies are in a different position. They are less risky, but also need much less investment. Having fewer growth opportunities, they need less working capital and less investment in new plant, etc. Accordingly, with fewer business opportunities, their money is not working as hard in the business. Thus it should be repaid to shareholders, and the dividend should increase significantly, to form a substantial part of profits.
For the company in managed decline, there are no investment opportunities and little point in reinvestment: dividends should represent the maximum that is safely payable.

**P/E RATIO AND SHARE PRICE OVER THE LIFE CYCLE**

A company’s P/E ratio represents, in part, the market’s expectations of its future growth potential. It stands to reason that the growth potential decreases over the life cycle: so will the P/E. The earnings per share (eps) will be negative at the start of the cycle, turning positive and growing with the company’s profits. Thus the combination of these factors, the share price, will vary dependent on how investors see the future prospects. In early days, the company’s share price will be volatile, reflecting changed expectations of risk and of profit potential; as the company matures, expectations stabilize and so does the share price.

**PUTTING IT ALL TOGETHER**

Combining all of these points, our basic exposition of a company’s financial strategy is shown in Figure 3.3.

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**Figure 3.3**

Financial strategy over the life cycle

<table>
<thead>
<tr>
<th>Growth</th>
<th>Launch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business risk high</td>
<td>Business risk very high</td>
</tr>
<tr>
<td>Financial risk low</td>
<td>Financial risk very low</td>
</tr>
<tr>
<td>Funding equity</td>
<td>Funding equity</td>
</tr>
<tr>
<td>Dividend payout nominal</td>
<td>Dividend payout nil</td>
</tr>
<tr>
<td>Growth high</td>
<td>Growth very high</td>
</tr>
<tr>
<td>P/E high</td>
<td>P/E very high</td>
</tr>
<tr>
<td>eps low</td>
<td>eps nominal</td>
</tr>
<tr>
<td>Share price growing and</td>
<td>Share price growing and</td>
</tr>
<tr>
<td>volatile</td>
<td>volatile</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business risk medium</td>
<td>Business risk low</td>
</tr>
<tr>
<td>Financial risk medium</td>
<td>Financial risk high</td>
</tr>
<tr>
<td>Funding debt</td>
<td>Funding debt</td>
</tr>
<tr>
<td>Dividend payout high</td>
<td>Dividend payout total</td>
</tr>
<tr>
<td>Growth medium/low</td>
<td>Growth negative</td>
</tr>
<tr>
<td>P/E medium</td>
<td>P/E low</td>
</tr>
<tr>
<td>eps high</td>
<td>eps declining</td>
</tr>
<tr>
<td>Share price stable with</td>
<td>Share price declining and</td>
</tr>
<tr>
<td>limited volatility</td>
<td>volatile</td>
</tr>
</tbody>
</table>
KEY MESSAGES

- Financial risk must be managed against the business risk, in order to produce the most effective risk profile out of which to create value.
- Risk changes over the company’s life cycle, as should the financing strategy and the dividend payout strategy.
- If you have read this chapter, you have read the basic model but you have not learned enough to understand it or manipulate it. Chapter 4 gives you the underlying rationale.

KEY TERMS IN THIS CHAPTER

- Business risk
- Life cycle
- Dividend
- P/E ratio
- Financial risk
In this chapter we discuss financial strategy, including a company’s choice of sources of finance and its dividend policy, and relate this to the business risks a company faces. Business risk is the inherent risk associated with the underlying nature of the particular business and the specific competitive strategy that is being implemented. It relates to everything except the risk from the financing structure. Financing risk is about debt/equity mix.

Debt and equity have different risk profiles for investor and company, and their use has to be balanced to meet the company’s particular circumstances. It is inappropriate for a company with high business risk to adopt a financial strategy that involves high financial risk. Similarly, for public companies it is unwise for a low-risk business to use mostly equity, which is low-risk finance.

A life cycle model is introduced, which considers the risks companies face at the launch, growth, maturity, and decline stages. From this we draw up a profile of the suitable financial strategy for each type of company, showing how its financing and its dividend policy should change as it develops.

This is a long chapter, as it contains the whole theoretical foundation behind the model we use, plus examples of its use. The key points were summarized in Chapter 3, but we believe that it is important to understand the thinking behind the model before you take liberties with it.

ASSESSING BUSINESS RISK

Businesses take risks, they have to: without risk there is little chance of a reward. One of the characteristics that distinguishes successful businesses from those that fail is the way in which they understand and manage the risks they face, both business and financial. Accordingly, an understanding of financial strategy involves, first, a clear appreciation of business risk. Once the business risk is analyzed, the financial strategy can be designed to complement it. If the financial strategy is appropriately designed and properly implemented it can enhance shareholder value but, even more dramatically, when an inappropriate financial strategy is applied the entire business can be placed in jeopardy.

Accordingly, we start by considering business risk.

Business risk describes the inherent risk associated with both the underlying nature of the particular business and the specific competitive strategy which is being implemented. Thus a very new, focused, single product, high-technology company (such as a business developing a specific aspect of biogenetic engineering or a new style of super-computer) would have a very high intrinsic business risk. At the opposite end of the spectrum is the very well-established, highly-diversified (both geographically and industrially) conglomerate-style group, which has a relatively low overall business risk. It must be remembered that, of itself, neither a high nor a low business risk is better; as long as the relative level of return matches the level of associated risk, either is acceptable.
Business risk often has little to do with risk as discussed by financiers, calculated as $\beta$ in the Capital Asset Pricing Model (Appendix 1). Company-specific risks are irrelevant in a diversified investment portfolio, and all that matters is correlation with markets. However, here we are concerned with corporate financial strategy, not investment strategy, and business risk matters.

The simplest way to consider business risk is that it relates to all of the risks that the company faces, other than those which relate directly to financing decisions. It thus deals with the volatility of the operating cash flows. Such volatility might arise from sources external to the organization, for example: changes in legislation or in fashions or public opinion; the actions of competitors; or the general economic climate. Internal risks also need to be considered, for example: the risks associated with a particular manufacturing process; or the ways in which an organization communicates with its key stakeholders; or its cost structure. Internal risks are often easier to control than external risks, but all potential risks need to be considered.

An embarrassingly simple model for a preliminary analysis of business risk is shown in Figure 4.1.

In Figure 4.1 the constituents of profitability are broken down to facilitate analysis. As business risk relates to variability in operating results, it seems reasonable to examine the factors making up these operating results, which takes us back to the basic accounting model: Sales less costs = Profits. We can then begin to see what affects each of these items for our particular company. For sales, it might be appropriate to examine what affects our selling price and the volumes we sell; or an analysis of products and markets may be more useful; or both may be used. For cost analysis, a preliminary approach may be to determine the ‘operating leverage’ – the relative level of fixed to variable costs, on the basis that companies with high levels of fixed costs may have difficulty achieving breakeven if sales fall. The level of committed costs may also be important; a business with a high commitment to forward expenditure is more vulnerable (i.e. riskier) than one with no such commitments.
Some examples of issues to consider in analysing business risk

**Demand volatility**
- market factors
- changes in tastes
- short product lives
- competitors’ actions

**Selling price volatility**
- market factors
- price wars
- economic conditions
- prices of substitutes and complements
- over-supply (or shortages)

**Input cost volatility**
- number and strength of suppliers
- efficiency
- relative level of fixed costs
- reliance on commodity markets
- level of committed costs in terms of volume and price

**Expense volatility**
- reliance on key suppliers
- relative level of fixed costs
- how significant is the level of expenses relative to the size of the business?
- level of committed costs (e.g. leases)

**Growth drivers**
- ability to develop new products
- ability to find new sites on which to expand
- ability of existing management to take the company to the next stage of development

**Other issues to consider**
- industry analysis – relative strengths of rivals, suppliers, and customers; likelihood of new industry entrants; availability of substitutes
- analysis of political, environmental, social, technological, legal, and economic developments that may affect future business
- working capital needs
- exposure to currency risks

Once business risks have been analysed, the company may find it appropriate to develop strategies to mitigate some of its key risks.

For each business the specific risk factors will differ. However, Working insight 4.1 illustrates some examples of issues to consider in analysing business risk.

**STRATEGIC ANALYSIS**

As we stated earlier, this is not a book about corporate strategy, but if we are to match financial strategy with business strategy it is important to have at least some understanding of some of the key tools of the latter. Accordingly, before we dive into financial strategy, let us have a quick look at some useful strategic tools which can inform our analysis of business risks and opportunities.
PORTER’S FIVE FORCES

In his book *Competitive Strategy*, Michael Porter\(^1\) sets out five forces that drive industrial competition: the relative bargaining power of buyers, that of suppliers, the threat of new entrants, the threat of substitute products, and the degree of rivalry amongst existing firms in the industry. The relative strengths of these forces indicate the attractiveness of an industry to a particular player, and suggest where they might wish to compete.

The five forces model can also inform the analysis of business risk. By rating the threat posed by each of the five areas, a quick picture of industry attractiveness can be obtained. Attention can be focused on the key forces, and business strategies determined to preserve advantage or mitigate threats.

PESTLE ANALYSIS

In analysing a company’s competitive position, it is essential to understand how changes will affect it. Some of the key drivers of change are:

- Political
- Economic
- Social
- Technological
- Legal and
- Environmental issues

A PESTLE analysis considers how these factors are likely to affect the company and the industry in which it operates. Ideally, one should draw up a five forces analysis at the current time, and then see how the PESTLE factors will impact upon that analysis. The business strategy and risk assessment then need to take these into account.

RESOURCE-BASED THEORY

Whereas the five forces analysis takes the approach that competitive advantage lies in industry characteristics, the resource-based view of competitive advantage is that it lies in the company’s own unique set of assets. In other words – what is this company particularly good at, which enables it to compete successfully? It has been argued that any assets that an organization has which can confer competitive advantage must have the following characteristics\(^2\):

- Valuable
- Rare
- Imperfectly imitable and
- Non-substitutable

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The rather unwieldy acronym VRIN is used to describe such strategic assets. An assessment of business risk should consider these assets and identify what needs to be done to preserve and enhance them.

**LINKING CORPORATE AND FINANCIAL STRATEGIES TO ENHANCE SHAREHOLDER VALUE**

Before we go into a detailed discussion of how to tailor a financial strategy, it is worth taking time to see how these strategic models interact with the value drivers discussed in Chapter 2, and with the company’s value in the stock market. Figure 4.2 sets out a model of this.

The organizational aim is to create shareholder value. This is done by selecting a business strategy that it is believed will be successful, and that business strategy is derived from analysis of external forces (e.g. using the Porter model and a PESTLE analysis) and of the company’s internal resources and capabilities (VRIN). However, the strategy so determined should link to what is seen to drive value in the business, using the seven drivers of value. These are explained in Working insight 4.2.

Figure 4.2 shows that the strategy developed by internal and external analysis should also reflect the relative worth of the seven value drivers. If this is done, and if the appropriate performance measures designed, with targets that are stretching but achievable, value should be created.

Alas, it’s not quite that simple. Figure 4.2 shows that the value created is also, fundamentally, a function of management ability – the best strategy in the world is useless unless it is implemented well. As we discuss in Chapter 5,
Corporate Financial Strategy

CONSTITUENTS OF FINANCIAL STRATEGY

Business risk was defined as representing the risks to the company’s operating results. Financial risk is the risk inherent in the company’s choice of financing structure. At this juncture it is worth considering the key decisions to be made in determining a financial strategy, and the associated risks.

Think about the flows of funds through a company. It will use its asset base to generate profits, of which some will be paid out to shareholders as

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4 This explanation is based on work originally published in Building Value with Capital-Structure Strategies by H.A. Davis and W.W. Sihler (1998), Financial Executives Research Foundation Inc.
dividends, and the rest will be retained for future growth. Although the level of those profits will depend partly on its operating efficiency, the ultimate level of profit available to shareholders will depend on the interest burden that the company is carrying – which itself depends on the level of debt it takes on. The directors thus have three decisions to make:

1. How large do we want (or need) the asset base to be?
2. How much of the company’s finance should be as debt (and therefore how much as equity)?
3. How much of the profit should be paid out in dividend (and therefore how much should be retained for future growth)?

These decisions are closely linked. If the directors see attractive growth opportunities, they may wish to retain the funds rather than pay them out in dividend (the practicalities of this action will be discussed in Chapter 13). If they feel obliged to pay out dividends, then the expansion could be financed by increasing the company’s debt levels. Should the directors feel that such an action would be unwise, then perhaps they should not increase the asset base at all.

The three decisions above describe a relatively closed system. There is however a fourth decision for the directors to make:

4. Should we issue new equity?

Issuing new equity expands the company’s funding. If it has a target debt–equity ratio (something which appears to be rather more common in academic text books than it is in practice) then increasing the equity base also means that it can take on more debt.

Putting it very simplistically, these are the only four decisions that need to be taken in financial strategy.

FINANCIAL RISK

Financial risk relates to the level of debt a company is carrying (its gearing, or leverage). In assessing the riskiness of debt and equity it is essential to specify the perspective from which the analysis is being made. This is diagrammatically illustrated with respect to debt and equity funding in Figure 4.3.

Any commercial lender such as a bank will try to reduce its financial risk by a whole series of actions. These include ensuring that it has priority in terms of both repayment of principal and payment of interest, possibly by taking security over specific assets, and by insisting on covenants in its loan agreements, which can entitle it to demand early and immediate repayment if the financial position of the borrower appears to deteriorate. Clearly these steps transfer a large part of the financial risk to the company, as any breach of the loan agreement conditions (such as failing to pay interest on the due date) can place the continued existence of the company in jeopardy.

5 Pedants sometimes argue that a share buyback could be a fifth decision, but we see that merely as an extension of decision 3, or the reverse of decision 4.
 Conversely the financial rights of the same company’s shareholders are minimal and hence their financial risk is higher. The company has discretion over whether or not to pay a dividend, even if it has sufficient distributable profits, whereas the payment of interest is effectively committed and mandatory. Ordinary shareholders cannot demand from the company the repayment of their investment even if no dividends are paid over a long period; except by placing the company into liquidation, in which case they are last in the queue and do not receive any distribution until all the company’s creditors have been paid in full. They seek a large part of their return in the form of a capital gain in the share price – which is by no means guaranteed to them, even if the company prospers.

Balancing this lack of control and higher level of risk on the part of the shareholders, of course, are the potentially unlimited returns which they can achieve if the share price rises. The lender, taking lower risks, receives a more certain but much lower maximum return in the form of interest and the repayment of principal.

We deal above with ‘plain vanilla’ debt and equity. Many years ago, when we first became involved in corporate finance, most financing options could quite easily be categorized as either debt or equity; nowadays there is a continuum between secured term lending at one extreme and ordinary, permanent shares at the other. Many of the categories in between are discussed in Chapters 11 and 12 of this book.

For the purposes of this discussion of business and financial risk, our perspective is that of the company raising funds and then investing it. Consequently, although the shareholders’ risk associated with investing in equity is quite high, the financial risk of using predominantly equity financing from the company’s perspective is much lower than if a high proportion of debt funding were used.
BALANCING BUSINESS AND FINANCIAL RISK

Financial risk should complement the business risk profile, in order to develop logical alternative financial strategies for different types of business. Combining together a high business risk strategy with a high financial risk strategy (such as would be achieved by borrowing to fund a start-up bio-tech company) gives a very, very high total risk profile: such a company may succeed spectacularly but it is much more likely to fail completely and disappear. Thus, as illustrated in Figure 4.4, the combination of strategies in quadrant 2 is not a logical, long-term basis for creating a successful business.

However when the differing risk and return profiles of various stakeholders are taken into account, this type of strategy can be seen to be potentially very attractive to risk-taking entrepreneurs. If most of the required funding can be raised in the form of debt, the entrepreneurs have to inject very little of their own money. If the business turns out to be successful, they will get the vast majority of these upside gains: the return to the lenders of the debt financing being fixed. However, if the high-risk business fails, as it probably will, they can only lose the small amount of equity which they have injected. From their perspective this appears to be the ultimate combination of ‘you take all the risk and we’ll take all the return!’.

Unfortunately for these entrepreneurs, lenders do not see this as an acceptable combination of risk and return. It is now well-established that very high business risk enterprises should be funded with equity which the investors know is potentially at risk (i.e. venture capital). Where it has proved possible to raise large amounts of inappropriate debt capital for such high business risk investments, the fault lies with the lender far more than with the borrower, because the lender is committing what can be regarded as the most heinous sin of corporate finance: accepting a debt-type return while taking equity-type risk.

In our opinion, funding should only be regarded as ‘true’ debt when there is an alternative way out, that is, if the lender can still recover the balance outstanding even if the business or project concerned fails to perform as originally

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**Matrix of business and financial risk**

<table>
<thead>
<tr>
<th>Business risk</th>
<th>Financial risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>(1)</td>
</tr>
<tr>
<td>Low</td>
<td>(3)</td>
</tr>
<tr>
<td>High</td>
<td>(2)</td>
</tr>
<tr>
<td>Low</td>
<td>(4)</td>
</tr>
</tbody>
</table>

Figure 4.4
expected. Normally this alternative exit route would be provided by realizing the underlying value of certain assets owned by the business or pledged as security for the loan by a guarantor. If no such realizable assets exist, the true risk associated with the funding is that of an equity investor. Hence, if the lenders settle for an interest-based return, they are not matching their real risk profile to the return being achieved. There is nothing wrong in taking on a high-risk equity investment, as long as the expected return is commensurately high; otherwise it is a totally unacceptable risk/return relationship.

Referring to Figure 4.4, this means that high business risk companies should use low-risk financing, that is, equity venture capital, and should keep their cost bases as variable and discretionary as possible (quadrant 1). This logic is now fairly well understood and accepted by the capital markets, even to the extent that venture capital is primarily provided by a relatively small number of specialist finance organizations. They understand the high business risks involved and aim to manage these risks by demanding a very high level of return on their investment and using portfolio management techniques, which allow for a proportion of their investments failing completely, resulting in a total financial loss.

The greater problems at this very simple level of financial strategy tend to be encountered with the lower business risk companies. In general, business risk tends to reduce as companies mature; not least because the unsuccessful ones will fail and cease to exist. For example, the earlier examples of high-technology start-up companies have a very high business risk, but the surviving equivalent high-tech start-ups of 100 years or 50 years ago are now the well-established major corporations of today, with much lower business risk profiles. Not only does the business risk decline but, as the company matures, the cash flow tends to become heavily positive, having been significantly negative during the development and launch stage. Therefore, if the initial financing has been raised in the most relevant form of equity, the financial structure of this more mature company can easily stay predominantly equity based, due to a lack of need for substantial external funding once the cash flow becomes significantly positive.

Unfortunately, this can result in a disastrous combination of a low business risk strategy and an even lower financial risk; that is, quadrant 3 of Figure 4.4. Not only is this unsatisfactory for shareholders, but it can lead to a hostile takeover bid for the company, as this incredibly low-risk strategy has led to the company being undervalued by the capital markets. Successful corporate raiders do not often get involved in changing the business strategies of the companies they buy, but they do alter their financial strategies; normally by dramatically increasing the financial risk profile by raising the debt to equity ratio. Thus these highly leveraged takeover deals should be focused on relatively mature, low business risk companies with strongly positive cash flows, which would enable the company to service and repay the dramatically increased borrowings. It is interesting to note how many of the subsequent post-deal corporate collapses arose in businesses which did not fit this required profile.

The result of this simple analysis is that there should be an inverse correlation between the business risk of a company and its financial risk profile. Normally the business risk reduces over time as the company’s core business matures or
it diversifies into other areas and therefore the financial risk should be correspondingly increased. However, changes in the external environment or in the internal competitive strategy can lead to quite sudden increases in the level of business risk. When this happens, managers may well be advised to restore the overall risk perception for their company by reducing the level of financial risk; such as could be achieved by making an equity rights issue and using the funds raised to repay some of the outstanding debt of the company. Consequently, although the most common direction of strategic movement would be from quadrants 1 to 4 of Figure 4.4 — that is, moving from high to low business risk and from low to high financial risk — it is possible and logical for companies to move in the opposite direction.

**PRIVATELY HELD COMPANIES ARE DIFFERENT**

At this point, we should point out that although much of what we say in this book is relevant to all companies, the issues raised in the preceding paragraphs need not be applied by the owner/managers of private companies.

In a listed company, as we discussed in Chapter 1, although the shareholders own the company, the directors run it. There is thus a potential agency conflict. Furthermore, most listed companies have thousands of shareholders, and it would be impossible for the directors to determine the individual goals of these shareholders, so the generic ‘shareholder value’ is assumed as the company’s target. Added to this is the threat of takeover if a listed company’s share price fails to perform.

The situation in a private company is very different. The directors are often the owners, and even if they are not, there is likely to be a strong link between the two. Accordingly, the directors can ask the shareholders directly what they want from the company. The answer may not be ‘shareholder value’: in many private companies, the chief objectives are financial security for the family shareholders, and the creation of a business to pass down to future generations. Accordingly, shareholders in private companies may be reluctant to take on any debt, despite it being an excellent idea in theory, if it means that they could lose sleep over it. And as private companies cannot suffer the threat of a hostile takeover, there is no need for them to follow the prescribed strategy of gearing up a low-risk business.

**UNDERSTANDING THE LIFE CYCLE**

Much of the rest of this chapter takes the product life cycle model, expands on it considerably, and applies the model in terms of business risk and financial strategy. This model informs the rest of the book, so we make no apologies for dwelling at some length on how it works.

Most products follow a well-established life cycle in that the trends in sales values, in real terms, are rationally explained by reference to the current stage of development of the product. The basic practical problem associated with the life cycle is that it is much easier to use the technique to explain why sales moved as they did (used as an *ex-post* analysis), than it is to use it to predict
what sales will be in the future (in an *ex-ante* role). However if the life cycle is broken into several stages, as shown in Figure 4.5, it does become possible to understand what the long-term future trend in sales levels might be and to make strategic decisions accordingly.

The traditional ‘S curve’ focuses on the level of sales over the life cycle. As we are more interested in the company’s financial position, Figure 4.5 also illustrates what the related profits and cash flows profiles could be.

In the launch stage, both profit and cash flow are likely to be negative, reflecting the investment made in developing the product and the market. The progression through the life cycle sees both profit and cash flow becoming positive. (There is little point in starting if this is not likely to happen!) The stage at which each stops being a drain on the organization will depend on the characteristics of the enterprise; in Figure 4.5 it is assumed that capitalization of costs will mean that profits turn the corner sooner than cash flows.

Clearly the initial sales levels during the launch phase of any product will be low; at this stage there is a significant business risk that sales will never increase and may disappear altogether if the product either does not work properly or is not accepted by the market. Should these initial risks be overcome so that the product becomes accepted by the critical mass of the important opinion-forming segment of potential customers, sales levels should start to increase significantly. This period of dramatic sales growth cannot continue forever, as the total demand for any product is finite. Inevitably the increase in sales starts to slow down as all the potential customers for the product come into the market and establish their normal rate of usage for the product. (It must be remembered that, at present, this discussion is concentrating on the demand for the
It is very common to find that this period of fast growth in demand attracts a number of late entrants into the market; the apparent risk associated with the product has reduced since it is now accepted by the customers, but the continuing growth indicates an opportunity to make an attractive financial return. Obviously these new entrants will increase the total capacity for the product, but the existing players are also trying to increase their shares of this growing market (the reasons for this strategic thrust are considered later in the chapter). This can cause a significant increase in total industry capacity, even though the demand for the product is starting to stabilize (the problems of accurately forecasting the change-over points in the product life cycle are substantial). As a result many businesses in the industry will have spare new capacity, which can cause fierce price competition until a more stable equilibrium position is established. This overcapacity is diagrammatically shown in Figure 4.6, and the maturity stage of the life cycle cannot be properly started until this position is resolved.

In the maturity stage demand and supply are much more in balance, so that the remaining efficient producers can expect to make stable profits on their substantial sales volumes. Unfortunately, this happy state of affairs eventually ends when demand for the product starts to die away. This can be caused by saturation of the market or by the launch of a better replacement product which rapidly attracts away most of the current mature product’s users.
The question of replacement products has generated much debate over the years because, if the initial product is very broadly defined, it can be argued that this ‘new’ product is a development rather than a replacement. A classical illustration, which also serves to demonstrate the absurdity of taking this argument too far, is the decline of various forms of transportation. Was the horse-drawn carriage ‘product’ developed into the automobile, or replaced by it; as both provide personal forms of transport? If the railways had defined their product offering as ‘general transportation’, the demand for their ‘product’ would not have declined as dramatically with the advent of aeroplanes, trucks, and cars. However, unless their business strategies had been completely altered so that they moved into these newer forms of transport, their share of this still expanding ‘transportation’ market would have significantly fallen.

A very important element highlighted by the product life cycle is the concept of changes in market share for the competitors in any particular industry. It is quite straightforward to distinguish among the different stages of development in terms of the key strategic thrusts of the business and to relate these to the relative associated business risks at each stage. This can be most easily demonstrated by applying the Boston Consulting Group’s portfolio matrix, albeit in a slightly different manner to its traditional use.

**THE BOSTON MATRIX**

Figure 4.7 shows the product life cycle in a diagrammatic representation developed by the Boston Consulting Group in order to explain the concept of product portfolio management to senior managers of large groups.

The two axes are based on key business success factors identified from the PIMS (profit impact of market strategies) database set up by General Electric and now run by the Strategic Planning Institute. This database holds financial and other performance data on over several thousand business units and provides a good source of comparative information on business performance. During the 1960s it was generally agreed that two of the three most important determinant factors of business success were relative market share and the rate of growth of the particular markets (the third factor being the level of profitability of the product).

These factors are hardly surprising, but if the product life cycle is added into the discussion they can be related to the key strategic thrusts of the business and to the most appropriate management style. In Figure 4.7 the horizontal axis shows the relative market share of the company, that is, its share compared to its largest competitor. This relative measure is vitally important because a 20% market share may sound impressive, but if the only competitor has the other 80% market share, the company’s competitive position is relatively weak. The vertical axis represents the rate of growth in sales volumes for the market in total, and hence goes from highly positive at the top to significantly negative at the bottom; thus replicating the product life cycle’s S curve (this represents a digression from the traditional Boston matrix, which did not include negative growth).
The four boxes of the Boston matrix can be matched – approximately – to the four stages of the product life cycle. The question mark represents the launch stage; growth is the star; the mature company is used as a cash cow (and the original Boston matrix saw this as funding more new launches and stars); and the low-growth, low-share dog can be seen as the decline stage of the life cycle, when perhaps the product should be put out of its misery.

**BUSINESS RISK AND CASH FLOWS OVER THE LIFE CYCLE**

Having set out our basic model, what we now need to do is show how business risk maps onto each stage of the product life cycle, as this will help determine the appropriate financial strategy. Figure 4.8 illustrates how the level of knowledge increases as time progresses.

The analysis in Figure 4.8, which is expanded upon in the rest of this section, is summarized in Figure 4.9, which shows the business risk profile of the company at each stage of development.

During the development and launch stage we have many assumptions, but little knowledge. Any forecasts we prepare to show the business’s future would be speculative. The product may not work properly or, even if it does work, the market research indications may prove to be wrong with the eventual demand being too small to justify financially the total required investment.
The key strategic thrust at this stage is to focus on product development and market research. It may be important to be first to market, to blunt the attack of potential competitors. At this stage, the business risk is very high. Cash flows are likely to be negative, reflecting a significant investment in research and development, market research, and fixed assets, with minimal, if any, sales income. Depending on the industry, this stage could last for weeks, months, or even years.

Should the product launch prove successful and the sales volumes start to grow, the strategic thrust changes to market development, but particularly to market share development.
It is much easier for a company to increase its market share while the market is growing rapidly than it is in a static market. This is not surprising, because even if the particular company grows its sales at 50% per year while the market is expanding at 40% per year, its main competitors would still be expanding their own sales volumes quite rapidly on a year-on-year basis. It is possible that they may not even notice that their market shares are declining or, if they do, they may be capacity- or capital-constrained from increasing their output sufficiently rapidly to maintain their previous shares. If a similar market share growth objective were set for a mature, very low growth product, the competitive response would probably be much more severe, as the increased sales volumes would almost all have to be achieved at the expense of lower sales volumes on the part of competitors. Consequently it is a sound business strategy to try to achieve the maximum desired market share before the market itself reaches its maximum size. This requires a clear focus on market share development, but a leading company in a high growth industry should also invest in ensuring that the market matures at as large a size as is financially justifiable. (Financial expenditure on market development – increasing the size of the overall market, rather than increasing the company’s own share of this market – is very difficult to justify if the company has only a small share of the market. If only a 10% share is held by the company, 90% of any general market development expenditure can be argued as being to the benefit of competitors.)

Such a concentrated strategic focus on market development and sales growth requires a shift in management style to ‘marketing-led’ management, where the emphasis is not necessarily on continually changing the product unless that is required to achieve a competitive advantage in the marketplace. Some management teams seem to be capable of operating successfully in both entrepreneurial and marketing-led modes, whereas others have been unable to change their style, with a corresponding detrimental impact on the business.

The business risk profile during this rapid growth phase has declined somewhat from the very high level of the launch stage but is still high. Managing a rapidly growing business brings its own challenges, in terms of the style and capability of the executives. The main unknowns at this stage relate to the ultimate market share achieved by the company and the length of this period of sustained growth which together dictate the sales volumes which will be achieved during the maturity stage of the life cycle.

Cash flow at the growth stage could be neutral, or could remain negative. In some industries, the growing sales income will provide sufficient funding to cover all of the outflows. However, companies with a high working capital requirement will find that the inflow from sales is devoured by the increases in inventories and receivables (see Chapter 19 for more about working capital management). Other businesses may need capacity increases that require investment in fixed assets.

Eventually, the sales growth will slow and the product will enter its mature phase. Here, sales have stabilized, the competition is identified and understood, the cost base is known and controlled. There should be no need for working capital increases, and cash flows should be positive. Business risk has decreased, and is mainly focused around the need to maintain this ‘cash cow’ position for as long as possible.
If the company has been successful in implementing its marketing strategy during the period of rapid growth, it should enter the maturity stage with a very high relative market share of a large total market. This is important because it is during this stage that the company recoups the investments made during the earlier stages. As shown in Figure 4.10, the net cash flows in the launch phase are heavily negative and might stay negative during the high growth stage, although they should end it as reasonably balanced, depending on the rate of growth and need for additional investment in fixed assets or working capital. Once the rate of growth slows this cash outflow reduces, while the cash produced from sales revenues increases (high sales volumes at a good profit per unit) resulting in a strong positive net cash flow.

Clearly this move into the maturity stage of the life cycle represents a very significant change in the strategic thrust of the business. As previously mentioned, any attempt now to increase significantly market share is likely to be fiercely resisted by competitors, particularly where the cost structure of the industry is substantially fixed and committed on a long-term basis. (In other words, if significant exit barriers from the industry have been erected, there may well be intense competition to maintain market share.)

The most appropriate management style during this phase can be described as ‘controller’ mode, because the business should be maximizing the return
which can be generated over this mature stage of the life cycle. It is important that the business does not switch suddenly from its marketing-led growth strategy to a cost-cutting, short-term profit maximization mindset. This type of change could lead to a rapid decline in market share and a dramatic shortening of the period over which high profits and strong positive cash flows can be generated. The key objective is to maintain market share as long as the total market demand justifies the required level of marketing support, but at the same time to look for efficiency gains which can improve the overall return on investment. This fundamental change away from a growth management focus to a profit improvement emphasis is very difficult for many management teams to accept and implement, with the result that many businesses try to grow when market conditions and competitive pressures make this financially very unattractive. If such growth is impossible in their original business, they may turn to a diversification strategy by investing in new product areas.

Once again this move along the product life cycle reduces the level of business risk as, in the maturity stage, the main risk relates to the length of this period of stable sales volumes and high total profit levels. From the economic viewpoint of the shareholder, this cash positive phase is the justification for the initial investment in the development and launch of the product. Indeed financially rational investors would like the company to move as rapidly as possible around the product life cycle until the maturity stage is reached, and then the company should stay in this cash-generating phase for as long as possible. Unfortunately the earlier styles of innovation and growth tend to be more attractive to many managers, who can find the appropriate controller style of the maturity phase very boring. (Oddly, shareholders find it far from boring to see increasing profits and cash flows generated year after year!)

Nothing good lasts forever, and during the final decline stage of the life cycle, both cash inflows and outflows are severely reduced. As the investment in working capital decreases, the business may be cash-positive, but the net cash flow must be at least neutral as otherwise the product should be culled instantly. (No company should be a net investor on a long-term basis in a dying product.) This overall position often causes management to invest in new growth opportunities, with funding moving in the direction indicated by the arrow in Figure 4.10. However, as is argued later in this chapter such a reinvestment is neither inevitable nor, in many cases, desirable.

In fact, for some groups of managers the declining stage of the product life cycle may be more exciting, as the dominant style now becomes ‘cost-cutter’ in order to ensure that the cash flows do remain at least neutral. The product is now dying, although the process may take many years and some spin-off ideas may be relaunched as new products in their own right. However, even in the move from the maturity stage to the declining phase, the business risk can still be argued as reducing. The only remaining business risk associated with the product is how long it will take to die. No dramatic positive cash inflows are expected from this phase and, if no further cost savings can be made to keep the cash flow slightly positive or neutral, the product may be closed down by the company before the market demand completely disappears. One major practical problem, caused by the failure to change managers during the progression of a product through its life cycle, is that it is very difficult for the
managers who have developed, launched, grown, and then maintained a product to accept that it is now time to kill what has become part of their lives (one of the family!). Far too often, products are kept going too long in the vain hope that the market will pick up or that a new way will be found of reducing the associated costs still further.

CHANGING THE FINANCING STRATEGY OVER THE LIFE CYCLE

Having looked at business risks and cash flows, we can develop the appropriate financial strategy for each stage of the life cycle. Two, related, matters need to be considered:

- The business should make the best use of its available cash.
- Business risk and financial risk should be inversely correlated (as shown in Figure 4.4).

Let us remind ourselves of the key characteristics of debt and equity, from the point of view of the company being funded. Debt is high risk, and involves cash outflows in interest and repayments. Equity is low risk, with no contractual cash outflow, although the board may choose to declare a dividend. Thus, a company in the high-risk launch and growth stages, needing to invest in assets and development, would be foolish to let cash leak out of the business to service debt (even if a lender could be found with such a poor appreciation of risk that they would fund it). In maturity, with a lower business risk and less need for cash for investment, it is altogether appropriate to make use of debt as a low-cost source of funding.

Coupled with this is the inverse correlation of business and financial risk. Since the business risk decreases as the product moves through its life cycle, it is logical that the financial risk can be correspondingly increased without creating a completely unacceptable combined risk for the shareholders and other stakeholders in the company. This is illustrated in Figure 4.11 and leads to the obvious question of what impact this changing risk profile has on the financial strategy of the business.

As is illustrated in Figure 4.11, the financial risk profile should be very low during the very high-risk stage of product development and launch\(^6\). In essence, an investment at this early stage is made on the strength of a product concept, with possibly some prototypes and some market research, and a business plan indicating the future prospects for the eventual product. It is desirable at this stage to use low-risk equity sources of funding, raising capital from specialist investors who understand the high business risk associated with the company. This funding is properly described as venture capital.

\(^6\) It should be registered that the weighting of these business risks and financial risks is normally by no means equal; for most companies, the importance of the business risk profile is greater than the financial risk element. After all, an unsound business strategy cannot be made successful by clever financing; if the fundamental business is doomed, the best financial strategy can only delay its inevitable collapse.
Once the product is launched and initial sales growth can be demonstrated together with substantial future growth prospects a much larger body of potential investors becomes available to the company. This is just as well, because the growth stage will demand more funding. This can be combined with providing an exit for the venture capital company, as illustrated in Figure 4.12.

At the very high-risk launch stage, the required return is $X$. Equity funding is provided by venture capital. As the business moves into the growth stage it needs further funding, but the risks have decreased such that the appropriate return is only $Y$. This is not attractive to the venture capitalist, but equity can be found on the capital markets, by means of a flotation. The flotation has the added advantage of providing an exit for the venture capitalist.
The best way of achieving this type of exit route for venture capital initial funding is through the flotation (listing) of the company onto a public stock market, where a much broader range of equity investors can be attracted to buy shares in the company. Such an initial public offering (IPO) is not normally possible for a start-up company as, by definition, the business has no track record which can be used to indicate its existing success or its realistic prospects for the future. (We prefer to draw a veil over the excesses of the stock markets during the Internet bubble of the late 1990s, when companies appeared able to defy gravity by floating with little more than a catchy name and an improbable business plan.)

The changing source of funding over the whole life cycle is illustrated in Figure 4.13, and this indicates the fundamental change which can occur when the product matures. This maturity stage carries less business risk so that a medium level of financial risk can now be taken on by the company. The cash flow from the product has also turned significantly positive at this time and this combination allows the company to borrow, rather than only using the equity sources of funding which have been accessed so far in its development.

It is also important to consider the business from the perspective of the rational investor, who quite rightly regards this cash positive, mature stage as the most attractive phase of the life cycle. So far equity funding has been injected into the business to develop and launch the product and then to increase both the total market size and the company’s share of that market. If more equity funding is required during the maturity stage, this investment starts to look a lot like a financial black hole; money keeps going in, but nothing ever comes out.

Therefore the only logical source of additional equity funding during this maturity stage is for some of the profits being made by the company to be reinvested into the business. It must be remembered not only that these profits
Linking corporate and financial strategies

should be substantial in order to justify the investments made earlier in the cycle but also that additional financing can be raised through borrowing money.

This is now practical because the positive cash flow of the business provides the source of servicing the debt, paying the interest, and repaying the principal. If debt financing is used at the earlier stages of the life cycle, the absence of such positive cash flow means that the repayments can only be made by rolling-over the original loans or by raising equity to repay the debt funding.

This highlights a key issue regarding the use of debt and equity funding; as mentioned earlier, the risk associated with debt funding from the viewpoint of the lender is lower than the equity investors’ risk, due to the security taken and legally granted priority on full repayment. (Remember that the risk ranking is reversed when viewed from the perspective of the company, i.e. the user of the funding.) Risk and return are positively correlated, so that the return required on debt funding should always be less than that required on equity financing for the same company, that is, debt is cheaper for the company. This is completely logical from the company’s perspective because, as debt is higher risk funding for the company, the company should demand a cost saving to justify incurring the extra risk.

Therefore, as long as increasing the financial risk through borrowing (increasing the ‘leverage’ of the company) does not lead to an unacceptable combined risk, the cheaper debt funding will increase the residual profits achieved by the company. Thus the profits generated by the mature company, which uses some debt financing, will be enhanced and the return on equity will look even better, as less equity is required to fund the business.

This is even more important when the product moves into the decline phase of the life cycle, and it becomes clear that the product is dying. As debt is cheaper than equity, it is financially beneficial to the shareholders to extract their equity investment from the dying business as early as possible by replacing it with debt. Clearly it should not be acceptable to a lender to take on an unacceptable, equity-type risk, but it is often quite practical to borrow against the residual value of those assets which are, of necessity, tied up in the business until it is finally liquidated. These funds can then be distributed to shareholders, effectively representing a repayment of capital. In this way the present value of the shareholders’ investment is increased, without adversely affecting the position of the lender who is suitably secured on the residual value of the assets, and who receives a risk-related rate of interest. Consequently the principal source of funding for the declining business is debt finance with its associated high financial risk, partially offsetting the low business risk associated with this final stage of development.

DEBT PROFILE

In considering the balance between debt and equity in a company’s financial strategy, one other issue should be mentioned: of the debt, how much should be borrowed short-term, and how much long-term?

The answer to this question depends, unsurprisingly, on the company’s business, its assets, and the structure of its operations. Broadly, the company’s debt
The portfolio should attempt to match long-term assets with long-term finance, and short-term assets with short-term funding sources. So, the acquisition of a building would best be financed through long-term debt (if, indeed, debt is the best solution); additional inventories should be funded using short-term facilities such as an overdraft or revolving credit line. However, if a company has permanent working capital, this should be regarded as part of long-term needs. (This is discussed further in Chapter 19.)

The advantage to a company of using long-term rather than short-term debt finance is that once the loan has been agreed, the company can be confident that it cannot be taken away. Short-term debt needs to be refinanced at regular intervals and, if the company’s financial situation has deteriorated or the credit market tightened, this may become a problem.

Exceptions do exist to this broad rule about using long-term funding for long-term needs. If short-term interest rates are considerably lower than long-term ones, and the company believes that long-term rates will fall, it may be worth using short-term finance to start, with the intention of refinancing at a later date, in a more favourable environment. This strategy does, of course, carry obvious risks. The point here is that the policy would be for long-term debt, the issue is one of timing.

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### A LOGICAL DIVIDEND POLICY

Throughout this discussion on increasing levels of financial risk, the issue of how investors receive their required financial return has been critical. Ordinary shareholders can only receive this return in two ways: either the company pays a dividend or the value of their shares increases so that they can sell and achieve a capital gain. Obviously, the total return can take the form of a combination of dividend yield (the actual dividend received divided by the value of the investment) and capital appreciation but, theoretically, the shareholder should be indifferent as to whether the company pays a dividend or not. This is because, if the company does not pay a dividend, the value of the shares should increase to reflect the present value of the future cash flows which should be generated by the reinvestment of these profits which were available to be paid out as dividends. Clearly this argument is based on an assumption regarding the availability of attractive reinvestment opportunities (and the complete absence of tax considerations). Such an assumption of an infinite number of attractive reinvestment projects is not relevant if the company is restricted to one product, which progresses through its life cycle.

Hence for the current structured analysis, it is possible to indicate a logical dividend policy for a company at each stage of development, and this is diagrammatically shown in Figure 4.14. During the cash negative launch phase it is completely illogical for shareholders to expect a dividend from the company. They are supplying all the funding and therefore, if the company were to pay...
a dividend, they would have to increase their investment in order to pay part of it back to themselves! Consequently a nil dividend payout ratio is appropriate for these start-up, venture capital funded businesses; all of the high required return being in the form of capital growth.

There is also a very simple practical restraint on many such companies paying dividends. In order to pay dividends, companies require both cash and distributable profits, for example, profits after tax generated either in the current year or retained from past years. During the launch phase, the business may be generating accounting losses and therefore may have no distributable profits from which it can declare a dividend.

Even when the company has moved into the high growth stage of the life cycle, the cash flow is still, at best, only neutral and the source of funding is still equity. Thus a high dividend payout policy is still illogical and this is made even more clear when the key strategic thrust at this stage is considered. The business is trying to increase its market share while the market is still growing strongly: a logical investor would want the company to take advantage of these attractive growth opportunities while they exist and this could be constrained if current profits are paid out as dividends. As new investors are being attracted into the company during this stage in order to replace the existing venture capitalists and to finance the rapid growth, it may be necessary to pay a nominal dividend out of the increasing profit stream. However most of the required investor return would still come from capital growth in the value of the shares in the company.

<table>
<thead>
<tr>
<th>Dividend policy – payout ratio</th>
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<tbody>
<tr>
<td><strong>Growth</strong></td>
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<tr>
<td><em>Business risk high</em></td>
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<td><em>Financial risk low</em></td>
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<tr>
<td><em>Funding equity</em></td>
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<tr>
<td><strong>Nominal dividend payout ratio</strong></td>
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<tr>
<td><strong>Maturity</strong></td>
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<tr>
<td><em>Business risk medium</em></td>
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<tr>
<td><em>Financial risk medium</em></td>
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<tr>
<td><em>Funding debt</em></td>
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<tr>
<td><strong>High dividend payout ratio</strong></td>
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</table>
Once the maturity stage of the life cycle is reached, the dividend policy should change for a number of reasons. The cash flow from the business is now strongly positive and debt financing is now a practical and sensible alternative source of funding. Accounting profits should now be high and relatively stable so that a high dividend payout can be properly supported. More fundamentally, it is important that the dividend payout ratio is increased as there will be restricted opportunities for reinvesting the whole of the current profit stream in the existing business. There is a strong possibility of the law of diminishing returns setting in on incremental levels of reinvestment. If a company cannot reinvest funds at the rate of return demanded by its shareholders, it destroys shareholder value by retaining these funds. Consequently, as profitable reinvestment opportunities reduce due to the lack of growth in the now mature business, shareholder value can be maximized by paying out these surplus funds as dividends. Furthermore, as the company matures the opportunities for the shareholders to make a substantial capital gain must be limited, as the high growth period is in the past. Accordingly, in order to provide shareholder return the dividend yield would be expected to increase, to compensate for the decline in potential capital gain.

This required change in dividend policy represents yet another of the potential conflicts discussed in agency theory, because senior managers will normally prefer to retain these surplus funds within the company. These funds provide them with operational flexibility should an attractive opportunity be identified in the future and they also act as a buffer in case there is an unforeseen economic downturn or adverse change in the competitive environment. Neither of these arguments is based on the concept of maximizing shareholder wealth, but is more closely focused on a concept of reducing either managerial risk or accountability.

Inevitably the strong cash flows and high profits will die away as the product starts to decline, yet Figure 4.14 then advocates a total dividend payout ratio. In this context, ‘total’ means all the free cash flow generated by the business which, during this declining stage, is likely to be in excess of the profit levels reported by the company.

During the maturity phase, the company produces high profits and high net cash flows, out of which it should pay a high proportion as dividend. As illustrated in Working insight 4.3, this dividend yield will represent a substantial proportion of the total return expected by the shareholders, because future prospects for capital growth are now relatively low (profits may increase in future years due to improvements in efficiency levels, etc.). However once the product starts to decline, this future growth becomes negative with the result that the company may not want to reinvest to maintain the existing scale of business. This means that the depreciation expense (which is, of course, a non-cash operating expense charged in arriving at the post-tax profits out of which dividends are paid) may not necessarily be reinvested in replacing the assets which are being used up. This would increase the level of free cash flow generated by the business which could be paid out as dividends to shareholders.

The dividends could be further increased if the residual value of essential assets was funded by borrowing, and the cash distributed to shareholders, as mentioned earlier. This clearly highlights that part of the high dividends paid by declining companies really represents a repayment of shareholders’ capital.
This changing picture of the dividend payout ratio and its offsetting relationship with expected capital growth in the share value must always be considered in the context of a decreasing overall risk profile for the company as it matures. The reducing risk profile means that investors demand a lower total rate of return; the sort of relationships which can apply between dividend yields and capital growth are illustrated in Working insight 4.3.

THE IMPACT ON THE PRICE/EARNINGS MULTIPLE

Working insight 4.3 shows that the capital growth component of the total expected shareholder return reduces as the product passes through its life cycle. This is logical because the future growth prospects for the product start off very high and reduce as these prospects are actually achieved; obviously if the product is unsuccessful, these future growth prospects may be destroyed very quickly, rather than being delivered over time. The development of future growth prospects over the life cycle is illustrated in Figure 4.15, which highlights that the future growth of a mature product is relatively low and that a declining product will experience negative growth in the future.

As discussed in Chapter 2, a company’s price/earnings (P/E) ratio reflects its expected future growth prospects: the higher the growth expectations, the higher the P/E. Accordingly, the P/E ratio might be expected to fall over the company’s life cycle. Figure 4.16 shows this.

We can now expand upon the analysis in Chapter 2 and thus far in this chapter, to show how a company’s earnings per share (eps) will need to increase over its life cycle due to the decreasing P/E ratio. Working insight 4.4 demonstrates the rising levels of eps needed to justify a share price of 100 p.
### Future growth prospects

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<th>Growth</th>
<th>Launch</th>
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<td><strong>Business risk high</strong></td>
<td><strong>Business risk v. high</strong></td>
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<tr>
<td><strong>Financial risk low</strong></td>
<td><strong>Financial risk v. low</strong></td>
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<td><strong>Funding equity</strong></td>
<td><strong>Funding equity</strong></td>
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<td><strong>Divd. payout nominal</strong></td>
<td><strong>Divd. payout nil</strong></td>
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<td><strong>High growth</strong></td>
<td><strong>Very high growth</strong></td>
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<th>Maturity</th>
<th>Decline</th>
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<td><strong>Business risk medium</strong></td>
<td><strong>Business risk low</strong></td>
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<td><strong>Financial risk medium</strong></td>
<td><strong>Financial risk high</strong></td>
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<td><strong>Funding debt</strong></td>
<td><strong>Funding debt</strong></td>
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<tr>
<td><strong>Divd. payout high</strong></td>
<td><strong>Divd. payout total</strong></td>
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<td><strong>Med/low growth</strong></td>
<td><strong>Negative growth</strong></td>
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### Price/Earnings multiple

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<td><strong>Business risk high</strong></td>
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<td><strong>Financial risk low</strong></td>
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<td><strong>Funding equity</strong></td>
<td><strong>Funding equity</strong></td>
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<td><strong>Divd. payout nominal</strong></td>
<td><strong>Divd. payout nil</strong></td>
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<td><strong>Growth high</strong></td>
<td><strong>Growth v. high</strong></td>
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<tr>
<td><strong>High P/E</strong></td>
<td><strong>Very high P/E</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Decline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business risk medium</strong></td>
<td><strong>Business risk low</strong></td>
</tr>
<tr>
<td><strong>Financial risk medium</strong></td>
<td><strong>Financial risk high</strong></td>
</tr>
<tr>
<td><strong>Funding debt</strong></td>
<td><strong>Funding debt</strong></td>
</tr>
<tr>
<td><strong>Divd. payout high</strong></td>
<td><strong>Divd. payout total</strong></td>
</tr>
<tr>
<td><strong>Growth med/low</strong></td>
<td><strong>Growth negative</strong></td>
</tr>
<tr>
<td><strong>Med/low P/E</strong></td>
<td><strong>Low P/E</strong></td>
</tr>
</tbody>
</table>
In Working insight 4.4 the share price does not rise above the initial 100 p paid by the shareholders. Of course, were this to happen in practice the shareholders would be most dissatisfied with the company’s performance. This illustrates an important point: the very high real growth in eps already included in the share price when a very high P/E multiple is applied to the company. The delivery of this expected growth will not make the share price increase because it has already been taken account of in the current share price. The share price will only rise if the company can actually exceed this expected and paid-for rate of growth, or continue to grow at this rate for longer than expected. However in the first three stages of the life cycle it is quite possible for the company to deliver strongly growing eps.

This continued period of rapidly increasing eps is very important from the shareholders’ point of view because, as was made clear in Working insight 4.3, during the launch and growth stages almost all of their financial return is generated from capital growth in the value of their share, the company having a very low dividend payout policy at this time. Consequently, generating only that rate of growth in eps which merely maintains the existing share price would be considered a very poor performance by the company. The eps growth during the launch and growth periods should drive up the share price so that an acceptable overall annual rate of return is achieved by the shareholders. This

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8 In practice, of course, a P/E multiple of 40 would imply considerable growth expectations from the market, particularly in the light of the high cost of equity used to illustrate the differences between the stages in this and in Working insight 4.3.
needs to take account both of the declining P/E multiple which will be applied to these earnings as they grow, and of the changing dividend payout ratio which should reduce expectations of future growth as the company matures.

The dramatic impact which this additional requirement for share value growth has on the need to generate eps growth is mathematically illustrated in Working insight 4.5.

Working insight 4.5 builds on the discussion in Chapter 2 about the need for eps to grow at a faster rate than the share price. It shows that for a particular, relatively short life cycle the growth in share price which is required to give shareholders their expected total annual return, including the capital gain element, is itself quite dramatic (e.g. from 100 p to 742 p over the 17 year life cycle...
period to the steady state stage as shown in column 4). However, due to the declining P/E multiple which is also correctly applied as the product matures, the required increase in eps needed to generate this final share price is even greater (an incredible growth from 2.5 p to 106 p, as shown in column 6).

The underlying assumptions for these illustrations are slightly exaggerated, and have been deliberately kept consistent so that the scale of the changes can be seen quite clearly as the analysis is made more comprehensive. This enables the overall financial strategy analysis to be completed by adding in the share price of the company over the product life cycle, as is done in Figure 4.17.

This figure shows both the movement in the actual share price over the life cycle and the associated volatility. The share price is obviously the result of multiplying the P/E multiple and the eps level, and its required trend over time depends on the proportion of the total shareholders’ return which must be delivered through capital growth. As highlighted in Working insight 4.5, the share price should be increasing during the launch and growth stages, and then stabilizing during maturity, before declining during the product’s final phase of its life cycle.
During the very early period of the launch stage, any financial valuation exercise is very speculative as nominal (or even negative) earnings are being multiplied by the very high P/E multiple which reflects the expectations of strong future growth. As already discussed, this stage of investment is really an area for sophisticated professionals who appreciate the high associated risks and potentially, commensurately high financial returns. The considerable potential for complete business failure or outstanding success results in very high volatility in share prices during this stage of the life cycle.

Once the product moves into the growth phase, this volatility will decline somewhat but will still be high due to the continued expectations of significant future growth in share values/eps, market share, and the total size of the market. Failure of any of these factors (which are of course interlinked) can lead to a rapid decline in share values, while unpredicted favourable developments can create quite spectacular growth in share prices. However, during the maturity stage, when the major element of shareholders’ return comes from dividend yield, the share price should become much less volatile. This is because the strong positive cash flow and ability to use debt financing should enable the company to maintain the expected dividend payments even through normal economic cycles, so that the share price is consistently supported by this stable dividend stream. It is also much easier to value this type of income-generating share by reference to equivalent risk-adjusted interest-earning alternative investments; thus prices of high dividend-paying shares tend to move very directly as a result of any changes in interest rates which affect the yields on corporate bonds and other such investments.

This period of relatively low volatility comes to an end as the single product company moves into the final phase of its life cycle because the volatility of the now declining share price increases again. In spite of the reducing business risk, the share price is now controlled by a total dividend payout policy and the investors’ view on the length of time for which such payments can be maintained. Consequently small external influences on the rate of decline of the product and its consequent cash generation capability can have very significant impacts on the share value, thus increasing the volatility.

**IMPACT OF A DIVERSIFICATION STRATEGY**

So far in this chapter consideration has been concentrated on single product companies as they, and their products, progress through the life cycle. As mentioned earlier, the inevitable result of the ultimate decline and death of such companies is not an attractive proposition for the senior managers and some of the other stakeholders. The analysis does however highlight that this inevitable liquidation of the company is not necessarily of great concern to shareholders in the company; although these shareholders are likely to change-over time as the relative balance in the form of their financial return between capital gain and dividend yield changes.

Clearly, rational shareholders may be unconcerned about the forthcoming decline and death of any one investment from which they are currently receiving very high dividends (which partially represent a repayment of their
invested capital). If they wish to preserve the value of their total investments, they can reinvest this capital repayment in other companies. Indeed it is fairly obvious that rational investors can generate any desired mix of capital gain and divided yield by investing in a suitable portfolio of companies. Similarly, they can create a portfolio with any desired overall risk profile by suitably weighting the different types of available investments. Thus no sensible investor is forced to accept the reducing risk profile and increasing dividend yield which should be offered by a maturing company. A readjustment to the overall portfolio can be made either by reinvesting this increasing income stream in higher risk, higher growth companies or, more rapidly, by actually selling some shares in the now mature business.

The costs of these changes to the investors’ portfolios are normally very small and, more importantly, such changes should be easily planned well in advance if the company and the capital markets are using the appropriate signalling procedures. Therefore, from a shareholder’s perspective there is no obvious need for a company to implement a diversification strategy when the growth prospects from the original core business reduce due to the product’s maturity. However, such corporate strategies of utilizing the strong positive cash flow from the successful, but now mature, core businesses to invest in new higher growth potential products, lie at the very heart of the Boston matrix shown in Figure 4.7.

As demonstrated in Figure 4.10, the growth and decline stages of the life cycle can be both broadly neutral in terms of net cash flow. The strong positive net cash flows of the maturity stage, which are not required for reinvestment in the core business are therefore often used to fund the launch of other new products, which are at the beginning of their life cycles. Inevitably, over time, such a cross-subsidization reinvestment strategy will create a diversified conglomerate-style group which, due to its continued high level of reinvestment, should be considerably bigger than an originally similar, but still focused business which had followed a financial strategy of increasing its dividend payout ratio over the same period. The major question is whether shareholder value has been increased or destroyed by the diversification alternative strategy.

In Chapter 1, the key point was emphasized that shareholder value is increased by developing and maintaining a sustainable competitive advantage. It is therefore critical whether the business can develop such a competitive advantage in these new areas of commercial endeavour. Obviously it may be that the new products utilize some technological breakthrough which was developed in the core business, and thus the company is not truly diversifying. Similarly the new areas of investment may build on an existing strength of the business so as to increase the overall competitive advantage held by the company. This can be diagrammatically illustrated by using a variation of the Ansoff matrix, as is shown in Figure 4.18.

If a key competitive strength of the existing business is built on the current product attributes or strong branding which have created very loyal customers, a strategic thrust for continued growth could be based on umbrella branding of new products with comparable attributes. This would utilize the major intangible asset of the company: its loyal customers. Such a customer-based competitive strategy has been implemented by many retailers, highlighted by the
development of ‘retailer’ brands. Alternatively the existing product may have reached maturity in its current markets but other markets may be less fully developed, and so may represent additional growth opportunities. Once again this growth strategy is based on an existing competitive advantage of the business; its ability to manage the launch and growth stages of a product, as demonstrated in its original market. However, if doing this the managers need to be very careful to modify their previous strategy to reflect a different competitive environment.

These growth strategies can be successfully developed from an existing competitive advantage but, as with the case of the growth strategy focused on the original core business, the external business environment must be consistent with the strategy selected. Thus for growth of the core business to be financially successful the product must be at the right stage of development. Similarly, for the customer-led strategy any new products must have similar attributes so that they appeal to existing loyal customers and any umbrella branding is appropriate. For the market development strategy, the dynamics of the new markets must be sufficiently similar to enable the company to make use of its existing competitive advantage developed in its more mature home market;
there are many examples of very expensive failures from this type of product globalization strategy and far fewer examples of success. However Figure 4.18 also shows where genuine diversification strategies fit and why they are most unlikely to create increased shareholder value. Rather than building on existing competitive advantages, diversification goes to the other extreme and can be somewhat cynically described as ‘selling products you don’t have to people you don’t know’.

It is very interesting that most companies regard diversification as a risk reduction exercise. For the shareholder, it is clear that investing in a portfolio of shares spreads, and hence reduces, the risk associated with any one share. However, from the company’s perspective, it normally means moving into areas where it has little or no experience and thus there is no particular reason why the company should achieve an above normal rate of return. Of course if the risk profile is reduced then a lower rate of return may still create shareholder value.

This highlights another major problem with basing a diversification strategy on a successful mature, cash positive business. As was shown in Figure 4.17, the mature stage of the life cycle should have the lowest volatility in share prices. Volatility is a good indicator of risk in assessing any financial investment, as a ‘guaranteed’ level of return represents a low risk to the investor. Hence, if a company diversifies into launch and growth products, the associated risk will increase from the perception of the investor; thus an increased return will be demanded to compensate for this increased risk. As the company has no significant competitive advantage it may not be possible to deliver such an increased return, with a consequent reduction in shareholder value.

Further it is clearly much more difficult for a diversified company, with businesses at all the different stages of the life cycle, to communicate a clear, focused financial strategy to the financial markets via its dividend policy or its debt-to-equity ratio. Theoretically such a conglomerate should be valued by the financial markets at a minimum of the weighted average P/E multiple of its component businesses; the excess valuation over this minimum representing the value ‘created’ by the existence of the conglomerate group. In reality the share price of most such groups is at a discount to this theoretical minimum, which explains why so many of these companies have been the target of corporate raiders in recent years. If successful, the raider changes the financial strategy of the group rather than the competitive strategies of the component parts.

APPLICATION INTERNALLY TO THE DIVISIONS OF A GROUP

As the threat of takeover and break-up is potentially on the horizon for many large diversified groups, it is important that this analysis of appropriate financial strategies is applied internally by them to their individual operating divisions. In other words, the target financial return set for each division should be based on an assessment of the associated risk; thus a start-up division would be treated as effectively having venture capital funding, with a consequently high requirement for financial return. Also the form of that financial return
would be dictated by the stage of development of the particular business so that cash (dividends paid by the division to head office as the only shareholder) would only be extracted from mature divisions, where the opportunities for reinvestment were less attractive.

The establishment of very clear, specific, tailored financial targets for each division of a large group can greatly help to focus the attention of divisional managers on those objectives which can create the maximum impact on the value of the total group. This would not be achieved if all the divisions tried to maximize short-term profits or cash flow, or even used some form of return on investment as the principal measure of divisional performance. Unfortunately, in many large groups, this level of financial sophistication is still not being applied today. In many, the hurdle rate for financial investments throughout the group is taken to be the weighted average cost of capital for the group and almost all divisions are expected to contribute towards the overall dividends paid out by the group to its shareholders. The almost inevitable result of this type of control system is that the divisions themselves start to develop a portfolio of businesses which are in different stages of development, so that they can then manage their financial resources across their own portfolio!

A CAVEAT

This has been a long chapter, and has set out the model we will use in discussing financing strategy throughout the rest of the book. We now wish to make a caveat on how you should use it.

Models are useful to guide your thinking; they are not a substitute for that thinking. Throughout this chapter we have made generalizations about how organizations operate, for example, we have said that launch businesses are cash-hungry, that growth businesses need to fund inventory, and so on. But we could provide you with many examples of companies and industries where these axioms do not hold true, and where growth has successfully been debt-financed, without any adverse effects. Our advice is: get to grips with the models, and understand what they are telling you, and why. Once you understand these underlying assumptions, don’t follow them blindly – feel free to adapt the model to your own circumstances. Just remember that financial risk and business risk should be inversely correlated; that debt is cheaper than equity; and that the most important thing is not to run out of cash.

KEY MESSAGES

- Risk relates to the volatility of expected results.
- In analysing the riskiness of a business, it is useful to perform an analysis using some of the basic tools of strategy: for example, Porter’s five forces, and a PESTLE analysis.
- The appropriate business strategy takes account of strategic analysis in the light of the seven drivers of value.
- Financial strategy covers four decisions: How much shall we invest in assets? How shall we finance the business? What dividend policy is appropriate? Shall we raise new equity?
- A company’s choice of financial strategy – how it chooses to finance its business, and its selection of dividend policies – must relate to its business strategy, its business risk, and the cash flows it is expected to generate.
- The life cycle model shows how business risk is likely to change as a company develops, and, accordingly, how financial strategy should develop.
- Start-ups and growth companies are usually high-risk businesses strapped for cash, and should adopt low-risk financing structures, primarily equity based.
- Mature companies are generally cash-generative low-risk businesses, which can improve their return to shareholders by taking on debt, increasing their financing risk.
- Businesses in managed decline, where the cash flows are clearly understood, should pay out as much in dividend and borrow as much as they are able.

### KEY TERMS IN THIS CHAPTER

- Business risk
- Covenants
- Debt
- Dividends
- Equity
- Financial risk
- Gearing
- Leverage
- Life cycle
- P/E ratio
- PESTLE
- Porter’s five forces
- Resource-based view
Overview 89
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Internal control and financial reporting over the life cycle 92
Management and direction of the business 93
Corporate governance, shareholders and shareholder value 95
Corporate governance and minority shareholders 96
Structures of control 97
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Attitudes to investors and creditors 99
The role of the investor in governance 101
The role of the institutional investor 101
Investors with short-term interests 101
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Corporate governance relates to the way in which companies are directed and controlled. It describes companies’ responsibilities to their key stakeholders, in particular those stakeholders who provide funding. It also considers internal control mechanisms such as the accounting systems. Corporate governance is a means by which risk can be reduced – both for the company itself, and for its funders. As such, consideration of corporate governance is fundamental to an analysis of corporate financial strategy.

It is not the function of this chapter to review all aspects of governance; there are several excellent books in this field. Nor do we intend to give you details of the governance regimes in any particular jurisdictions; these would probably change as soon as the book went to press. What we seek to do is examine several broad aspects of governance that are specifically relevant to financial strategy. We refer back to agency theory when looking at the different motivation of management and shareholders (although the subject of executive remuneration is subject to a more considered discussion in Chapter 6). We look at internal control, the implementation of systems to ensure that assets are safeguarded, liabilities controlled, and transactions correctly processed. We consider the implications of different forms of ownership, and different legal systems. And we develop a model that illustrates how governance requirements change over the business life cycle. We do this in very general terms, with the aim of giving our readers sufficient insight to be able to analyse their own situations.

The life cycle model used throughout this book takes the company through the stages of launch, growth, maturity, and eventual decline. We would have liked, for the sake of tidiness, to fit our analysis of governance into those same categories, but unfortunately it didn’t work out that way¹. An underlying theme in governance, followed by regulators and academics, is agency theory, which considers the differences in motivation between principals (shareholders) and their agents (executives). Accordingly, our analysis follows the development of the agency relationship as ownership changes over the life cycle, which does not necessarily directly mirror the commercial stages.

We see the ownership cycle as including some or all of the following steps:

1. Sole trader²
2. Partnership
3. Company with equity funding from the management
4. Company with equity funding from close associates (e.g. family)
5. Company with funding from the public (including institutional investors).

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¹ As business school lecturers it pains us to say this, but not everything in life fits neatly into a two-by-two matrix.
² Strictly speaking, sole traders and partnerships don’t belong in this book as they are not ‘corporate’. But they are important forms of business, and very much worth considering.
<table>
<thead>
<tr>
<th>Agency problems</th>
<th>Sole trader</th>
<th>Partnership</th>
<th>Limited company, owned by management</th>
<th>Limited company, owned by management and close associates (e.g. family and friends)</th>
<th>Limited company, owned by the public (inc institutions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>None, until the business becomes so big that the management function is delegated.</td>
<td>Some, but close contact between management and shareholder(s) can reduce this.</td>
<td>Growing agency problems, as management is separate from the dispersed ownership.</td>
<td></td>
</tr>
<tr>
<td>Internal control and internal reporting</td>
<td>Make sure everything gets invoiced and nothing gets lost. As the business grows, need to ensure employees are acting properly. Regular reporting of profits, cash and balance sheet position.</td>
<td>Division of duties and clarity of delegated activities. Formalized internal control and risk management systems. As the business grows, the internal control system becomes more critical. Outside shareholders may also demand that the organization has an internal audit function. Regular reporting of profits, cash and balance sheet position, including more sophisticated systems to be able to answer investors’ and analysts’ legitimate queries.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External reporting (excluding tax requirements)</td>
<td>Not required</td>
<td>Not required</td>
<td>May be a legal need to file financial statements.</td>
<td>Need to report the company’s performance and financial position to investors.</td>
<td>May be a requirement for extensive reporting on a regular basis. To include financial and non-financial information.</td>
</tr>
<tr>
<td>Corporate governance and financial strategy</td>
<td>No need</td>
<td>Optional</td>
<td>Compulsory in many regimes, depending on size of company</td>
<td>Compulsory in many regimes, depending on size of company. May be demanded by the shareholders.</td>
<td>Compulsory</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Management and direction of the business</td>
<td>Self</td>
<td>Partners</td>
<td>Directors</td>
<td>Management, and investors if they choose</td>
<td>Bring in outsiders for advice and resources, and also for independent action. Board committees needed in line with regulation.</td>
</tr>
<tr>
<td>Management compensation (discussed in Chapter 6)</td>
<td>To suit self and business needs</td>
<td>To suit partners and business needs</td>
<td>To suit owners and business needs</td>
<td>Agree with external investors. Probably a large capital-related element, to encourage growth and exit</td>
<td>Agree with external investors and governance regulation. Format of compensation will vary as to salary, bonus and long-term incentive dependent on the corporate objectives and life cycle stage.</td>
</tr>
</tbody>
</table>
In each stage the company will also have funding from lenders – either negotiated finance from banks and similar organizations, or spontaneous funding from trade creditors. The protection of these lenders’ positions is also an aspect of governance to consider.

Of course, the stages we describe need not happen in sequence – some organizations might never progress beyond Stage 3; others could start at Stage 4; some might move from Stage 5 to Stage 4 by way of a management buyout. However, this is a convenient peg on which to hang the analysis.

We do not here include companies funded by private equity, which fall somewhere between Stages 4 and Stage 5. This is an area with an unusual agency relationship between owners and managers, so instead we examine it in Chapter 17, when we look in detail at the world of private equity.

The model we are using to describe governance characteristics over the ownership life cycle is set out at Table 5.1.

Given that the cost of funding reflects the investor’s or lender’s perceived risk, one important function of corporate governance is to reduce this. Mechanisms of risk reduction can broadly be categorized as ‘monitoring’ or ‘control’. Monitoring involves the disclosure of information by the company to the stakeholder, which allows that stakeholder to evaluate management’s activities. Control gives the stakeholder the ability to prevent management from undertaking certain activities, or oblige them to take others. Both types of mechanism have their place (as will be seen in Chapter 11 when we deconstruct some common financial instruments).

**INTERNAL CONTROL AND FINANCIAL REPORTING OVER THE LIFE CYCLE**

Internal control relates to all controls, financial and otherwise, implemented by the organization in order to safeguard its assets, control its liabilities, and ensure that transactions are conducted and recorded properly.

For the sole trader with no employees, the main function of internal control is to keep track of the money. Accounting records are needed, at a minimum, to manage the cash, and to facilitate the preparation of tax returns. Forecasts of activity and cash requirements are needed to ensure that obligations can be met. A canny owner will set up more sophisticated accounting systems to provide information on product or customer profitability.

Once the trader takes on employees, internal control systems are also needed to monitor and co-ordinate their activities.

If the sole trader takes a partner, moving to a Stage 2 form of organization, the need for formal internal controls becomes more important. Partners have a responsibility to each other (and in some jurisdictions all are equally liable for partnership debts), and so there is a need for good records. Also, with several people involved in management, co-ordination is important, and good record-keeping and internal control can facilitate this.

The move from Stage 2 to the corporate form in Stage 3 is significant, as the company is a legal entity distinct from its owners. It is important that business
transactions are kept separate from those of the managers and owners, and properly accounted for; there is an obligation for better record-keeping and systems. In some jurisdictions there may be a requirement for the company’s records to be independently audited; in others, this obligation applies only to companies above a certain size.

In terms of agency theory there is a significant leap from Stage 3 to Stage 4 ownership. For the first time, there are owners of the company who are not involved in its day-to-day management. These equity providers may be family members, or outsiders such as business angels (see Chapter 7). In order to reduce their risk – actual and perceived – it is important that they receive regular communication about the business, in the form of financial statements. A narrative analysis of the business position and prospects is likely to be appreciated, and will reduce risk perception still further. The shareholders will also probably request an independent audit.

The move from Stage 3 to Stage 4 often coincides with the growth phase of the business’s life cycle. Elsewhere in this book we discuss the business risks involved in rapid growth; here we merely point out the need for good management information and control systems to manage an expanding business, with a larger workforce, and perhaps addressing different geographical areas and markets.

As companies grow and have more resources put into them by a wider body of investors, the role of accounting communication expands. Companies listed on stock markets are generally required to follow very detailed rules and codes, and make extensive disclosures. Markets also demand that their accounting and control systems can stand up to scrutiny, and this will be verified through the report of an independent auditor. Again, this is done to reduce the perceived and actual risk of investors, and also to raise the profile of the particular stock exchange, positioning it as attractive to investors. Of course, this protection of investors can come at a cost to the companies, and we discuss later in this chapter some of the more frustrating aspects of governance regulation, and the trade-off between corporate performance and conformance to the rules.

In this context it is interesting to note the implications of a significant body of research on voluntary disclosures and on governance requirements. Many academics and interested parties have tried to capture the financial impact of ‘good’ governance. To summarize an extensive body of work in a couple of sentences, the overall conclusion is that well-governed companies attract a pricing premium in poorly governed regimes, as they stand out as lower risk for investors. However, the impact of good governance, although still there, is less obvious in regimes which have an institutional context that supports good governance.

MANAGEMENT AND DIRECTION OF THE BUSINESS

The good thing about being a sole trader is that you can make all your own decisions, with no reference to anyone else. The bad thing is that this also applies to making your own mistakes. The wise sole trader takes counsel when needed, but has the ultimate right to choose what he/she wants.
In a partnership, the management structure differs. For a partnership of just a few people, it might be that all partners have equal rights, and decisions are taken jointly. But once the number of partners grows, some sort of executive structure is essential for the day-to-day running of the business. However, the choice of structure is entirely up to the partners themselves.

Once a business incorporates, directors are appointed to run it. (Here, we follow UK terminology, referring to all the main board members as ‘directors’ and differentiating ‘non-executives’ (NEDs) from those with executive responsibility.) Corporate governance regulations will set out who can appoint these directors, who can remove them, and what powers they have. Control over board membership is a useful protection for the investors.

NEDs can have some ties with the company, for example as past employees, as family members, or as representatives of significant investors. Alternatively, the NEDs can be independent, and such independence is seen as the pinnacle of corporate governance. For example, the Combined Code, which governs the behaviour of companies listed on the London Stock Exchange, states that large listed companies should have on their boards at least three independent NEDs, who will sit on the various board committees relating to audit and remuneration.

Definitions of independence vary between jurisdictions. Working insight 5.1 sets out some criteria that may be considered. The reasoning behind this is to avoid the possibility of a conflict of interest between these independent directors and the shareholders, and to reduce the likelihood of ‘capture’ of the NEDs by the executives.

As students of governance, we appreciate the need for independent non-executives on the board, and value the role they play. However, having been involved in the running of businesses, it does rather amuse us that a strict adherence to the need for independence could lead to a board comprising individuals who had had no contact with the business and did not actually understand it!

**Working Insight 5.1**

**Examples of criteria for determining the independence of directors**

The following criteria are used, in various jurisdictions, as indicators that a director is not independent:

- Has been an employee or executive of the company or a related company in the past X years.
- Is a close family member of a director of the company or a related company.
- Has had a significant business relationship with the company in the past Y years.
- Is a professional advisor to the company, or has some other business relationship.
- Represents a block shareholder or a major lender to the company, or has significant business transactions with same.
- Holds cross-directorships with other members of the company’s board.
- Participates in the company’s pension scheme or share option scheme.
- Has served on the board continuously for more than Z years.
For example, the UK’s Combined Code suggests that any NED who has served for more than 9 years can no longer be considered independent, as they may be too closely aligned to the management. The other way of looking at this is that, given the limited time that NEDs spend with their companies, it is only after several years that they might be embedded enough to make useful suggestions on strategy. The role of the NED is a sometimes uneasy balance between ensuring conformance with governance regulation and assisting corporate performance.

In this respect we note the work of Filatotchev and Wright, who differentiate the role of governance in different stages of the business life cycle. They see a value creation role in early-stage businesses, leading to a value protection role in the larger companies where an agency conflict is more likely. It is that value protection role that leads to demands for a stricter set of criteria for independence.

The thesis of this book is that a main objective of the company is to create value for its shareholders, and that such value takes the form of dividends and capital gain. We tempered this in Chapter 4 to allow for the fact that family companies might have a different view of shareholder value, reflecting the desire for a comfortable lifestyle and to pass a healthy business to future generations. In this section we consider how different shareholder groups may have different motivations, and the governance and financing problems this presents.

It is important that a company’s shareholders share the same objective. A company owned and controlled by managers who seek a comfortable lifestyle will sit uneasily in the portfolio of a financially driven investor who seeks a profitable exit: such a combination of company and investor should not take place. On a large scale, this conflict between shareholders’ objectives can be seen in the case of Manchester United, the football club, as set out in Case study 5.1. There is a strong argument to say that companies such as Manchester United should never list on a stock exchange, as the desires of public shareholders might be very different from those of the fan base. On the other hand, if this source of funding is ruled out, it can be difficult to see where expanding companies can obtain their money.

Such a conflict of interest can also be seen in hostile takeovers in general, as discussed in Chapter 15. Such takeovers are hostile only to the management, who may lose their jobs; shareholders, who stand to gain financially, may prefer the change in ownership. So managers who implement poison pill tactics may be doing so for their own entrenchment, while reducing value for shareholders in the process. This is another clear example of an agency conflict that only occurs in Stages 4 and Stage 5 of the life cycle, where management and ownership are separated: hostile takeovers are not possible in companies where the managers and owners are broadly the same people.

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In this section we examine governance in a different way, considering not the life cycle but the nature of ownership. In particular, we look at the rights and responsibilities of minority owners, and how these are effected in different jurisdictions, and what this means in terms of investors’ and lenders’ perceived risk and thus the company’s finance-raising ability.

Minority owners are considered as being shareholders other than the ‘blockholders’.

We are deliberately vague in our definition of block-holder. Many academic papers take a shareholding of around 5% as being ‘controlling’. That is fine for research purposes, but in terms of practical corporate finance is a bit limiting. Our concept of a block-holder ranges along a continuum between the shareholder (or shareholders working in concert) who has sufficient votes to make management pay attention, through to a level of voting power such that they can pass resolutions with minimal consideration for the desires of other shareholders.

Examples of such block shareholders could include a founding family, a holding company, or the State.

In a widely owned company with no controlling shareholder and no blockholder, there is clearly the potential for an agency problem. Management has the...
Corporate governance and financial strategy

ability to give themselves an easy life, should they so wish. Shareholders would need to band together to prevent them from, for example, increasing executive pay or perks, undertaking pet projects, or reducing their risk by rejecting potentially profitable projects or having too little debt in the capital structure.

This differs from a company where there is a block-holder with both an interest in the business and the power to do something about it. There is less of an agency problem between the management and shareholders, as the shareholders – or at least one of them – are in a better position to control the managers’ actions. This can be very beneficial to the non-block-holder shareholders, as there is a powerful party with the desire to create value for the company. However, it is also possible for the block-holder to act in its own interests to the detriment of other shareholders. Case study 5.2 illustrates some examples of block-holder activity.

**CASE STUDY 5.2**

**SOME EXAMPLES OF BLOCK-HOLDER ACTIVITIES**

*Henkel*, the German multi-national, has two classes of share – ordinary and preference. The main difference between the shares is that ordinary shares carry the entitlement to vote, but preference shares do not. There are more ordinary shares than preference, but a majority of the ordinary shares are in the hands of the Henkel family, which has committed to retaining ownership until 2016, thus protecting the company from a takeover and encouraging a longer-term view.

Although there is Henkel family representation on the supervisory board, no family members take part in the running of the company. This differs from the American family-controlled company, *Ford*. Members of the Ford family own shares which carry multiple voting rights, which gives them control over the activities of the business, despite their relatively small shareholding. The Ford family has at various times taken the decision to make a family member the company’s CEO.

A different form of family ownership and control was seen in *Monsoon*, a UK quoted company. Here, the founding family owned a significant majority of the shares, and controlled the board. Despite the objections of other shareholders, the company moved its listing from the London Stock Exchange to the UK’s junior market, the Alternative Investment Market. The company also breached various guidelines in the Combined Code of corporate governance, not having on its board any independent NEDs. It has since been taken private.

**STRUCTURES OF CONTROL**

Ownership of a share gives rights over capital appreciation and dividends, and gives voting rights which can guide the direction of the business. Although it may seem that these go hand-in-hand, there are circumstances where a block-holder can control the votes without actually having economic ownership. This can happen where the shareholding is structured through a series of partly owned holding companies. Figure 5.1 gives two illustrations of this.
A problem with such a shareholding structure is that the Target company’s operations and financial policies can be structured for the benefit of the controlling shareholder, even though that shareholder should only be entitled to a minority of the company’s cash flows: their voting interest is greater than their shareholding would suggest. Although in many instances such a structure is all above-board, and can indeed be beneficial, examples can be found where it has been used to expropriate assets from the Target business. This is known as the ‘tunnelling’ of funds.

Tunnelling can take various forms. At an extreme, the controlling shareholder can just order the transfer of assets at an under-value from the controlled company to the holding companies, or to another business that it owns. This could be in the form of outright asset sales, or in excessive management charges or dubious transfer prices. Even if none of these takes place, the very existence of the controlling shareholder will make the company more vulnerable to such activities and can therefore increase the other shareholders’ perceived risk and thus their cost of capital. It may also leave them without protection in the event

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**Figure 5.1**

**Illustrating structures of control**

<table>
<thead>
<tr>
<th>Pyramid</th>
<th>Indirect control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlling shareholder</td>
<td>Controlling shareholder</td>
</tr>
<tr>
<td></td>
<td>90%</td>
</tr>
<tr>
<td>Holding 2</td>
<td>Holding</td>
</tr>
<tr>
<td>51%</td>
<td>36%</td>
</tr>
<tr>
<td>Holding 1</td>
<td>Target</td>
</tr>
<tr>
<td>51%</td>
<td>15%</td>
</tr>
<tr>
<td>Target</td>
<td></td>
</tr>
</tbody>
</table>

In the pyramid example, technically, the controlling shareholder only owns 13.3% of the target company. However, they control Holding 2, which controls Holding 1, which itself controls target. Therefore, the controlling shareholder has effective control over target. In the example of indirect control, the controlling shareholder owns only 47.4% of the target, but has voting control through its subsidiary’s holding together with its own. Although these examples show substantial holdings, in practice a much lower shareholding may be sufficient to give effective control, depending on the distribution and interest of the other shareholders.
that the controlling shareholder chooses to make a bid for the whole of the share capital: they may see no realistic alternative to selling out.

To summarize this section, block-holders can be a powerful force in a company. They can operate for the benefit of the business and its ‘external’ investors, or to their detriment. The way in which they act is not necessarily a function of the regulatory regime, but of the individuals concerned. Nevertheless, the regime is important, and it is to this that we move in the next section.

CORPORATE GOVERNANCE UNDER DIFFERENT REGULATORY REGIMES

We said, that the start of this chapter, that we had no intention of giving a detailed exposition of governance under different regimes. However, the nature of the governance regime can have a significant effect on the financial strategies followed in different jurisdictions.

ATTITUDES TO INVESTORS AND CREDITORS

There is a direct relationship between the risk perceived by a funder and the return they require. The rules and regulations in force in different countries can themselves be favourable towards the rights of the funder, thus reducing their risk, or could be tilted towards protecting the interests of management, which can be seen to make the investment riskier. Likewise, regimes where all investors are treated equally are seen to be less risky for minority shareholders than are those where block-holders are favoured.

Working insight 5.2 sets out some indicators of shareholder rights, and devices which indicate that investments may be riskier.

In addition, factors affecting the perception of risk include the overall corruption rating of the country, the standards of accounting and auditing, and the rigour, or otherwise, with which laws are enforced. For listed companies, the regulations of each particular stock exchange regarding such matters as insider trading will also be relevant, as strong regulation means that investors should be less vulnerable to losses due to information asymmetry.

In general these risk-reduction governance mechanisms have led to a positive relationship between the strength of protection of minority shareholders and the number of market participants in a country. In countries where there are fewer investor protections, corporate ownership is often concentrated into the hands of block-holders. This has implications for companies in such regimes which wish to raise equity and extend their share ownership. Often they overcome some of the disadvantages by choosing to list their shares on a stock exchange in a country where governance is stronger. This can give access to equity at a lower cost.

Lenders too have to consider their risk–return relationship. Working insight 5.3 sets out some characteristics of the rules in different countries that may be perceived as more or less favourable to creditors.
5.2 Corporate governance mechanisms and the minority shareholder

Reducing risk for minority shareholders
- Ability to vote on all resolutions, including voting directors onto or off the board
- Ease of voting
- Legal mechanisms for minority shareholders to take action against oppression by the majority or against expropriations by management
- Laws or codes protecting the minority during a takeover
- Laws protecting against insider trading
- Requirement for independent non-NEDs on the board
- Requirement for high levels of relevant financial and non-financial disclosures, for example details of transactions with related parties

Increasing risk for minority shareholders
- Control enhancement mechanisms (CEMs) such as certain shares carrying multiple votes, or no votes, or ceilings on voting rights, or vetoes in certain situations


5.3 Corporate governance mechanisms and the lender

Reducing risk for lenders
- Ease of ability of a lender to enforce their security to repossess assets if loan terms are breached
- Strong legal protection over property rights, including intellectual property rights (so that the company’s assets cannot be expropriated)

Increasing risk for lenders
- Bankruptcy laws that leave the existing executives in control of the company rather than letting creditors put in their own management
- Bankruptcy laws that enable management to protect the company against creditor claims
- Priority of social or government claims over the rights of secured lenders
In the same manner as for shareholders, a background level of good corporate governance in a regime, with low corruption, good accounting and corporate reporting, and strong enforcement of the law will lead to a perception of lower risk and more enthusiasm to lend money\(^5\).

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**THE ROLE OF THE INVESTOR IN GOVERNANCE**

Corporate governance is not just a matter for the company and its management; the investors also have their part to play. Here, in particular, we refer to institutional ownership of large listed companies, but we also comment on the problems arising for companies where votes are decoupled from ownership.

**THE ROLE OF THE INSTITUTIONAL INVESTOR**

A fundamental problem for investors in public companies, which have an extensive share register, is the *free rider* problem. Any investor choosing to spend time dealing with a company’s issues in performance and governance should – if they are doing it correctly – be enhancing the value of their investment. However, their stake in the company might only be about 3% of the shares – which means that the holders of the other 97% of the shares have seen the value of their own investments rise, without having taken any action themselves. They are free riders.

Nonetheless, in recent years a growing number of investing institutions have devoted time and resources to improving corporate governance and social responsibility in the companies in which they invest. As take-up of initiatives such as the United Nations Principles for Responsible Investment\(^6\) becomes more widespread, investors will be seen to play more of an active part in decisions about how companies operate.

**INVESTORS WITH SHORT-TERM INTERESTS**

In Chapter 1 we referred to the dilemma faced by directors trying to satisfy the needs of different groups of shareholder, and mentioned in particular the difference between holders of shares for the long term, and those who are only holding the shares for short-term trading purposes. This problem is exacerbated by practices that decouple the ownership of the shares from the voting rights.

It is possible for investors to sell short or to enter into derivative contracts whereby they will gain if a company’s share price falls. It is further possible for those same investors to borrow shares; when this happens, the lender of the shares retains the economic ownership but the borrower can use the votes. Thus, companies can find themselves in a position whereby their business strategies, for example regarding acquisitions, are being voted upon by ‘investors’

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\(^5\) The OECD *Principles of Corporate Governance* (2004), which have been agreed by all 30 OECD member countries, set out some common elements underlying good governance in different regimes. They can be downloaded from www.ecgi.org or www.oecd.org.

whose interests will be served if the companies fail rather than succeed\textsuperscript{7}. In the absence of regulation, one can only sympathize with boards having to deal with this ludicrous conflict of interest.

**CORPORATE GOVERNANCE AND STAKEHOLDERS**

Corporate governance is one aspect of a wider movement known variously as sustainability, corporate responsibility (CR), corporate social responsibility or a host of other interchangeable terms\textsuperscript{8}. In order to set the tone for this section, we borrow a definition from Tomorrow’s Company to explain what we mean. They bring together shareholder value and sustainability to define the purpose of ‘tomorrow’s global company’:

“To provide ever better goods and services in a way that is profitable, ethical and respects the environment, individuals and the communities within which it operates.”\textsuperscript{9}

This corporate purpose reflects the UK Companies Act’s theme of ‘enlightened shareholder value’ discussed in Chapter 1, as well as the ‘triple bottom line’ criteria of financial, environmental, and social performance. Thus, corporate decisions have to consider a wider constituency than long-term profitability. So, for example, decisions on sourcing should take account of labour conditions in the supplier countries. Perhaps of most relevance to financial strategy is the need to think about the ethical implications of a highly geared capital structure: whilst this reduces the weighted average cost of capital for the diversified investors, it does mean that the company is taking on higher levels of risk, which may be unacceptable to the non-diversified employees.

Looking more broadly at CR, there is of course no reason why these principles should be in direct conflict with the creation of shareholder value. Working insight 5.4 below sets out some ways in which following a CR agenda can lead directly to the creation of value for shareholders as well as benefiting other stakeholders.

**KEY MESSAGES**

- Corporate governance relates to accounting and management systems, as well as to the composition of the board. It can be a means of reducing business risk.
- The ownership life cycle takes a business from sole trader through to various forms of corporate ownership and direction. As an organization moves through this cycle, different aspects of governance become more important.


\textsuperscript{8} A useful examination of the CR debate can be found in Cranfield’s Doughty Centre for Corporate Responsibility www.doughtycentre.info.

\textsuperscript{9} www.tomorrowscompany.com/.
How corporate responsibility can help create shareholder value

<table>
<thead>
<tr>
<th>Driver of value</th>
<th>Some examples of driving performance through sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Grow sales faster</td>
<td>• Innovative products to meet sustainability needs.</td>
</tr>
<tr>
<td>• Increase operating profit margin</td>
<td>• Attract customers by corporate responsibility stance.</td>
</tr>
<tr>
<td>• Reduce cash tax rate</td>
<td>• Better workforce efficiency by treating people better – attract better people, more training, less absenteeism, lower staff turnover.</td>
</tr>
<tr>
<td>• Fewer fixed assets</td>
<td>• Efficiencies due to energy and waste management.</td>
</tr>
<tr>
<td>• Less working capital</td>
<td>• Possibly take advantage of incentives.</td>
</tr>
<tr>
<td>• Increase the period for which the organization has a competitive advantage</td>
<td>• Improved efficiencies.</td>
</tr>
<tr>
<td>• Lower cost of capital</td>
<td>• Reduced waste leading to reduced inventory. Better supply chain practices as companies work in co-ordination.</td>
</tr>
<tr>
<td></td>
<td>• Increased brand equity in the sustainable company.</td>
</tr>
<tr>
<td></td>
<td>• Compliance leads to legitimacy which extends the ‘licence to operate’.</td>
</tr>
<tr>
<td></td>
<td>• Investors perceive lower risk in companies that are compliant with ‘best practice’ governance regulations.</td>
</tr>
</tbody>
</table>

- An investor’s or lender’s perception of the governance regime under which a company operates will significantly affect their perception of risk, and thus their required cost of capital.
- Companies need to pay attention to stakeholder requirements as well as those of their shareholders.
- Institutional investors may choose to play an active part in the governance of listed companies.

**KEY TERMS IN THIS CHAPTER**

Agency theory  Non-executive director (NED)
Block-holder  Ownership life cycle
Board  Pyramids
Corporate governance  Stakeholders
Corporate responsibility (CR)  Tunnelling
Internal control  Votes
Minority interests
OVERVIEW

The way in which executive directors (henceforth ‘executives’ or ‘directors’) are paid can influence how they choose to run the business. Thus, it can have a direct impact on both business and financial strategies. Remuneration committees have to devise schemes that will align the directors’ interests with those of shareholders, and encourage strategies appropriate to the company’s circumstances.

Many companies adopt a short-term bonus scheme for their executives, together with a longer term scheme which may be based on share options. The performance conditions attached to these schemes generally relate to accounting measures (for annual bonus schemes and share options) or to total shareholder return (TSR) (for other long-term incentive plans, LTips). However, accounting measures can bear little relation to the creation of shareholder value; and shareholder return is not necessarily related to management performance. Accordingly, performance measures need to be balanced carefully, to minimize distortion.

Furthermore, even when the performance measures have been selected, the company needs to set relevant targets. Many of the targets adopted, in particular those relating to growth in earnings per share (EPS), are flawed in that achievement of the target need not relate to the creation of shareholder value.

Finally, the scheme parameters must set a currency for the payment of the award: in cash, or in shares or options. Each of these methods is discussed, and the advantages and disadvantages are shown.

INTRODUCTION

Worldwide, executive pay has been the focus of much media and regulatory interest, and considerable academic research. Many of the arguments focus around how much executive directors should be paid, and the structure of such pay. In this chapter we examine the issues underlying the debate, and how they relate to the creation of shareholder value.

THE AGENCY DEBATE

In Chapter 1 we introduced agency theory which discusses the potential for conflict of interest between executives and shareholders.

Shareholders, as diversified owners of the company, wish to see the value of their investment enhanced. In agency theory terms, they are the principals and they employ executives, their agents, to run the company on a day-to-day basis. These executives may be motivated to act other than in the shareholders’ best interests, for any of the following reasons:

1. They might see advantage in incurring expenses that are not strictly value-addig, otherwise known as ‘perks’: the director receives 100% of the benefit of this expenditure, but bears little if any of the cost.
2. They do not have the shareholders’ advantage of diversification, and so may not wish to take the risks with the company that shareholders would be prepared
to accept; if the company fails, the shareholders have lost only part of their port-
folio, but the executive has lost his/her job.
3. They might not wish to expend the effort to extract the full potential value from
a project or investment, opting instead to ‘satisfice’ for an easier life.
4. Their time horizons, reflecting individual expectations, may be shorter than
those for long-term shareholders, implying an unwillingness to take on long-
term projects.

In summary, agency theory views executives as potentially risk-averse and effort-
averse, and sees the need for shareholders somehow to control their actions$^1$.

Shareholder control (implemented directly or via the actions of non-executive
directors) could, in principal, come from two direct sources. Firstly, the sharehold-
ers could monitor each one of the director’s actions, to determine whether it is
designed ultimately to benefit the company or the director. Or secondly, the direc-
tor’s service contract could be drafted so tightly that it would specify the appropri-
ate course of action in every conceivable circumstance. Of course, in practice each
of these alternatives is impractical, and so a third method needs to be devised.

The mechanism used to control directors, by attempting to align their motiva-
tion with that of the shareholders, is the design of the remuneration contract. If
directors’ pay is structured in such a way as to reward them for creating share-
holder value, then, taking an agency theory perspective, they are encouraged to
act as if they were shareholders: what is good for the shareholders will be good
for the directors. This is the assumption behind most of the regulation underly-
ing directors’ remuneration. It leads to the focus on performance-related remu-
neration discussed in the rest of this chapter.

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**STRUCTURING EXECUTIVE DIRECTORS’ REMUNERATION CONTRACTS**

In listed companies in the UK and US, executive remuneration policies are
determined by board committees comprising (generally) non-executive direc-
tors of the company. These non-executives, often advised by compensation con-
sultants, have to establish the requirements of the remuneration scheme, and
determine how these can be achieved.

Most directors’ remuneration schemes have three underlying objectives:

1. To attract good executives to the company.
2. To retain them in the company$^2$.

---

$^1$ We appreciate that in practice executives may well give 100% effort to the business, being aligned
with shareholders and acting as stewards of the organisation. However, the economic perspec-
tives that drive agency theory see Rational Man in this light and, as much of the regulation in
this area seems implicitly to follow this line of thinking, it is worth setting out its assumptions.

$^2$ Of course, there may be instances in which it is not to the company’s benefit for the director
to remain, and buying him/her out of their contract can be costly. Such instances need not
relate just to poorly performing executives; situations could arise in which a director’s manage-
ment style, which was ideal for a launch or growth company, is inappropriate as the company
approaches maturity and meets different challenges. Because of this, the practice of making sub-
stantial payoffs (golden handshakes) to directors leaving the company, although often unjusti-
fied, is not always a bad thing.
3. To align directors’ interests with those of the shareholders, in order to promote the company’s performance.

In order to achieve the first objective, pay has to be sufficient to meet the executive’s needs. The second objective may be met by devising a remuneration package that gives the executive an incentive to remain with the company long term. Received wisdom is that the third objective, aligning directors’ and shareholders’ interests, is most appropriately managed by using performance-related remuneration and by ensuring that the directors hold an equity stake in the company.

Given these objectives, the basic questions that need to be asked in devising an appropriate remuneration scheme for executives are as follows:

1. How much should be paid for ‘expected’ performance?
2. Of that, how much should be fixed, and how much performance related?
3. For the performance-related elements, what performance measures should be used?
4. What targets should be set for these measures?
5. How can we use the scheme to ensure that good executives are retained?

It is the role of the remuneration committee to address these issues in the context of each company’s particular circumstances.

### THE LEVEL OF PAY

The level of directors’ pay is, in practice, often based on published pay surveys or on pay levels in specific comparator companies. Although pertinent to the debate, the level of pay is not an issue of great relevance to corporate financial strategy; accordingly we do not pursue it here. However, the structure of pay – dealt with in questions 2 to 5 above – is most definitely significant to our deliberations, and is discussed in the following sections.

### THE GEARING OF PAY

In Chapter 1 we argued that the creation of shareholder value is subsequent upon the company having and maintaining a sustainable competitive advantage. Two issues arise here: a strategy has to be devised to create such a competitive advantage, and it has to be implemented successfully. It is for these activities that executives should be rewarded.

Once the level of pay for ‘average’ or ‘expected’ performance has been determined, companies must decide how much of that should be guaranteed as fixed salary, and how much should be performance related. Figure 6.1 illustrates some possibilities.

As Figure 6.1 shows, the gearing of pay can take many forms. Companies then have to determine which is most appropriate for their own circumstances.

For companies at the launch stage of their lifecycle, when both determining and implementing the strategy are critical, the directors have a huge influence
over the short- and long-term success of the business. Contrast this with the maturity stage, at which the directors’ role is more to do with managing the assets in place. At this latter (and later) stage the business has developed momentum and the directors’ skill lies in extracting the maximum value out of the existing assets, and in renewing them.

Because different strategies and styles are needed at different stages of the lifecycle, it would seem appropriate for different remuneration structures to be applied. For example, in launch and growth stage companies with high volatility, the directors’ actions are crucial to the future of the business. It might thus be expected that a large proportion of their pay will be related to a suitable performance measure. Directors managing mature companies or companies in regulated industries perhaps have less discretion over the company’s future, and so might receive proportionately more of their pay as fixed, and less based on performance.

Of course, the exact opposite viewpoint could be argued. As mentioned above, the director is unable to diversify his/her job and, if operating in a risky business environment, may be unwilling to add to his/her personal risk by taking on high pay risk. It can be argued that in such companies the executives should receive a higher salary-based component, to reduce their personal risk.

**Figure 6.1**

At the expected performance level, $P_1$, the director will be paid $R_1$. However, the three illustrated schemes derive this in different ways. Scheme A has no performance-related pay; the director is guaranteed to receive $R_1$, whatever the level of performance. Alternatively, pay gearing is total in scheme B – no pay without performance, but higher levels if expected performance is exceeded. Scheme C illustrates a mixture of these: the director is guaranteed to receive at least $R_2$, but can earn $R_1$ (or higher) dependent on performance. In practice for Scheme B (and perhaps for Scheme C), the level of pay for performing at $P_1$ is likely to exceed $R_1$, as the director should receive additional compensation for the additional risks being taken.
and to encourage them to take business risks that could enhance shareholder value. (However, although this makes sense intellectually, it appears in practice that individuals who take on the job of managing these volatile businesses are in part driven by the opportunity to earn high remuneration due to successful performance, and prefer the high pay gearing.)

### SHORT- AND LONG-TERM SCHEMES

When structuring directors’ pay we are seeking to encourage the creation of long-term shareholder value. However, it is rare for incentives to relate just to the long term, and in practice incentive pay will represent a mixture of short- and long-term elements. Each of these schemes will have its own performance measures and targets.

### ANNUAL BONUSES

It is common for executives to be paid annual bonuses based on measures such as: annual profitability; non-financial targets such as sales growth or new product development; or measures related specifically to their individual or team goals for the year. Such bonuses are often capped, as illustrated in Figure 6.2: for example it is common that the level of bonus will not exceed say 100% of the director’s base salary.

One reason commonly given for bonuses to be capped is that shareholders (represented in this instance by the remuneration committee) are unwilling for

---

**Figure 6.2**

Capped bonuses

Directors will not earn any bonus unless performance is at least $P_1$. Once performance levels of $P_2$ are achieved, no further bonus will be paid.
directors to receive large windfall bonuses based on fortuitous market circumstances over which they had no control. Accordingly, once performance exceeds a certain level – \( P_2 \) in Figure 6.2 – no further bonus will be paid for that year.

Although rarely discussed, a second reason for capping bonuses might be that very high bonus levels, even if justified by performance, could be seen as insensitive in the public eye and so damaging to the company’s image. An example of this was seen when the UK lottery company Camelot paid large performance bonuses to its directors. Despite the fact that these individuals had brought in the National Lottery on time and to budget, there was considerable adverse press and government comment about the level of the bonuses. Some commentators thought that this negative impact on the company’s image later damaged its position in the contest for the award of a further lottery licence.

The capping of bonuses, and the minimum performance level required before a bonus is triggered, can have adverse consequences. The motivational impact on executives of knowing that their superb performance is (in financial terms) unrecognized is significant. Furthermore, research indicates that the cap and floor on bonus levels can lead to manipulation of accounting figures. If a company is falling just short of the profit levels required to trigger the bonus, accounting provisions may be adjusted in order to increase profits to just over the trigger level. Similarly, in cases where performance is well in excess of level \( P_2 \), so no further bonus is available, provisions may be adjusted to move some of the profits into the following year, building up a ‘bank’ towards next year’s bonus.

LONGER-TERM INCENTIVES

Although annual bonuses are seen as a useful tool in ensuring short-term performance, companies need to generate shareholder value in the longer term and it is important that directors are rewarded using some longer term measures. Furthermore, the use of longer term performance measures can be one way to retain good executives in the company, as part of their remuneration is being earned over more than one year.

In the UK, and in many other jurisdictions, longer term incentives take the form of either long-term incentive plans (‘ltips’) or executive share (stock) option plans, or both.

Many different types of ltip have been created, and it would be pointless to describe them all in this chapter, as new schemes are being invented all the time. Accordingly, rather than describe schemes in detail we set out in Working insight 6.1 some of the features common to many schemes.

It should be noted that the three year performance period mentioned in Working insight 6.1 is in common use in the UK. Given that companies have different operating cycles, and are responsive to different economic conditions, it would perhaps be more appropriate for each company to tailor its scheme to the length of its own operating cycle. For example, the scheme in use for a chemicals manufacturer should probably operate over a longer period than that for a developer of software games. However, in practice such diversity is not often evidenced.
Within the wide range of long-term incentives, the ubiquity of executive share option schemes and their effect on corporate financial strategy is such that it is worth dealing with them in a separate section, later in this chapter.

**APPROPRIATE PERFORMANCE MEASURES**

In practice, two main forms of performance measure dominate executive remuneration schemes: those that reward accounting performance, and those that reward market performance. It is common to see annual bonus schemes rewarding the achievement of accounting results, for example profit growth. Share option schemes in the UK often use an accounting measure, growth in eps, as their key goal, whereas ltips will reward both accounting results and shareholder return.

Working insight 6.2 compares accounting and market-based measures, and sets out some of their key features.

Accounting measures are easily manipulated and may drive short-term decisions, such as cutting back on discretionary expenditure to boost profits. They can be distorted by inflation and reflect neither risk nor the shareholders’ cost of capital. Market measures are also flawed. If the share price rises for reasons unrelated to performance (e.g. on the rumour that a poor chief executive is about to be replaced!), directors could benefit. Alternatively, directors’ good performance may not be reflected in the share price, leaving them unrewarded.

Neither accounting nor market-based performance measures have an unequivocal advantage over the other; companies need to judge what measures are appropriate for their circumstances.
## Features of performance measures

<table>
<thead>
<tr>
<th>Accounting measures</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: profit, return on investment, eps growth</td>
<td>• Simple to use.</td>
<td>• Take no account of the cost of capital, and so do not necessarily reflect shareholder value.</td>
</tr>
<tr>
<td></td>
<td>• Easily understandable by all parties.</td>
<td>• Take no account of risk, and so do not necessarily reflect shareholder value.</td>
</tr>
<tr>
<td></td>
<td>• Based on audited figures.</td>
<td>• Easily manipulable by changes in accounting policies.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Market measures</th>
<th>• Reflect value received by shareholders.</th>
<th>• Share prices reflect market expectations rather than management performance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: TSR, share price</td>
<td></td>
<td>• Market imperfections may lead to over/under-valuation of the shares.</td>
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<tr>
<td></td>
<td></td>
<td>• Schemes may be complex and misunderstood by participants.</td>
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## Setting Performance Targets

As we have seen above, no single performance measure is suitable for all circumstances; each has its flaws. However, even when a remuneration committee has determined which measure(s) it will use, it still has to determine the targets to set.

Performance targets might be based on internal company figures, or on external benchmarks, or on a mixture of both.

Targets for annual bonuses are often set based on internal company figures, for example the annual budget. Although this has the advantage of simplicity, such practices can lead to ‘sandbagging’ of budgets (to ensure that targets are low enough to achieve easily), or to a mental attitude that what is important is to beat the budget, rather than to beat the competition.

One step towards externalizing the targets might be to set them based on, say, increasing performance by a certain rate, often a percentage over inflation. This type of measure, based on growth in eps, is most commonly used in executive
share option schemes. However, there are serious flaws in the way that most of these schemes set their targets, as discussed later in this chapter, in the section on share option schemes.

Schemes that reward directors for achieving TSR most commonly use external benchmarks as their target. TSR represents the percentage return that shareholders receive from the company over the performance period. Methods of calculation of TSR are shown in Working insight 6.3.

Because share prices may rise and fall for reasons which have little to do with company performance, most executive remuneration schemes reward the achievement of TSR compared to an index of comparator companies. In this way, the external ‘noise’ of price movements in a particular industry sector can be reduced. Schemes may reward executives if their relative TSR is in the top decile or quartile of the comparator index; the rewards would be progressively smaller as performance slipped down the table.

Rewarding comparative out-performance can make it difficult for directors to establish, in the mid-term of a performance period, how they are doing. Quite apart from their own share price data they would need information on the index performance of their comparators. For this reason, some companies prefer not to use this measure.

A second issue in rewarding out-performance of an index is that it can lead to situations in which the directors receive their reward despite the fact that shareholders have lost value. For example, a company whose TSR is minus 3% has

**Calculation of TSR**

TSR represents the dividend and capital gain on the share, as a percentage of the share price at the start of the period. For example, on 1 January the company’s share price is 100 p; on 31 December it is 110 p; and on 1 July the company paid a dividend of 5 p.

Basic TSR calculation:

- Increase in share price over the period: 10 p
- Dividend paid in the period: 5 p
- Total return to the shareholders: 15 p
- TSR: 15%

In practice, the TSR performance period would be considerably more than one year.

The calculation could be made more sophisticated by assuming that the dividend received in the middle of the year was reinvested in the company’s shares at the then-current price.

The calculation may also be adjusted by smoothing share prices to eliminate market distortion, for example by taking a six month average share price rather than that on a single date.
done exceptionally well if its comparators have averaged minus 10%. Although shareholders may at times resent this, it is justified as it would be unreasonable to penalize executives for the effects of a bear market. (And by the same token they should not be rewarded merely for having the good luck to ride a bull market.)

EXECUTIVE RETENTION AND ALIGNMENT

Long-term incentives are one way to align interests and to encourage directors to stay with the company. Another is to insist that they hold equity, or to reward them in equity which they have to hold for a given period. This payment method has the advantage of encouraging them to take a shareholder perspective.

Broadly, directors’ remuneration can be ‘paid’ by giving the director cash, shares or share options. Each of these payment methods has its own advantages and disadvantages, and the remuneration committee has to balance these in the light of the company’s particular situation.

The key features of each of the payment methods are summarized in Working insight 6.4.

<table>
<thead>
<tr>
<th>Features of payment methods</th>
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<tbody>
<tr>
<td><strong>Advantages</strong></td>
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<tr>
<td>Cash</td>
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<td>Shares</td>
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<td>Share options</td>
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Other differentiating factors between cash-, share- and option-based remuneration relate to the directors’ and companies’ tax positions and the treatment of the remuneration in the financial statements. These issues are country specific and subject to regular change, and so are not discussed in detail in this book. However, it is worth noting that there was much controversy over changes to accounting standards which introduced the need for companies to make a charge against profits in respect of equity-based remuneration. Previously, such remuneration had not featured in the income statement. Of course, the economic effect of the remuneration was the same, regardless of the accounting treatment; nevertheless, many companies chose to revise their remuneration policies, to avoid such charges.

**EXECUTIVE SHARE OPTION SCHEMES**

The most popular incentive scheme over time has been, and still is, the executive share (stock) option scheme which allows senior managers to buy up to a certain number of shares in the company during a specified period in the future but at a price fixed now. The future price is normally set by reference to today’s market price, as is shown in Figure 6.3.

Executive options work in the same manner as any call option (discussed in Chapter 12). If the managers are successful in achieving growth in the price of

![Figure 6.3](#)

Managers receive the option at time $T_0$ to buy shares at today’s price, $P_0$. The option can be exercised any time between $T_1$ and $T_2$. If the price rises during this period the managers can make an immediate capital gain by buying the shares at $P_0$ and selling at $P_1$ and $P_2$. 
the shares during the option period, they can make a capital gain by exercising their share options. If the share price does not rise, or indeed falls, there is no value created for the managers by granting them an option. This is the primary logic behind the use of executive share options, in that it is supposed to create goal congruence between the objectives of the shareholders and the managers; both are rewarded if the share price increases during the option period.

Despite the fact that share options are one of the most popular incentive arrangements for directors in the UK and US, they have certain limitations in their ability to incentivize directors to create shareholder value. These relate to dividend policy; holding costs; and appetite for risk taking. Each of these is discussed below.

**EXECUTIVE SHARE OPTIONS AND DIVIDEND POLICY**

Shareholders can receive financial returns from their investment either through capital growth or by the payment of dividends. As we have suggested throughout this book, for some companies more value might be created by paying dividends than by retaining profits for growth, as the company might not have available potential reinvestment projects which are expected to generate a return in excess of the shareholders’ demanded return on equity. In such companies, shareholder value is created by increasing dividends.

However, there is no incentive for directors to pay increased dividends during the life of any significant share option scheme. If the excess funds are retained within the company, rather than being paid out, the price of the shares should increase to reflect the cash held by the company, even though shareholder value may be being destroyed by such a dividend policy. Although it would be possible to reflect changes in the dividend payout ratio by adjusting the price at which managers can buy shares (the option exercise price), this rarely happens. Not doing so provides no incentive for managers to act in shareholders’ interests.

**EXECUTIVE SHARE OPTIONS AND HOLDING COSTS**

A second problem with executive share options is that although shareholders have made a material financial investment by buying their shares in the company, in most cases, managers have not. Although it would in theory be possible to require directors to forego part of their salary in order to participate in a share option scheme, this seldom happens. The directors are effectively given their stock options as part of their total remuneration package. This is an important difference because it means that only the shareholder has an opportunity cost of holding the shares. In other words, an increased value of the shares over the three or five years of the option does not automatically create value for the investor, whereas it would translate into a real capital gain for the manager.

The three reasons that shareholders incur a holding cost are liquidity preference, inflation, and risk.

One potentially important factor in this holding cost is clearly inflation because, although the nominal value of the shares may have increased, the shareholder may have lost money in real terms. As managers do not have to pay for their
shares unless and until they buy them, there is no such opportunity holding cost. They will still be able to realize an immediate and real gain upon the exercise of their stock options, whatever the rate of inflation; in fact, the higher the rate of inflation, the more certain they can be that the stock option will have value. This problem could easily be overcome by indexing the option exercise price, so that managers only receive financial reward for a real increase in the price of the shares; this is rarely done.

The other main opportunity cost for shareholders arises from their need to be compensated for risk. As has been already made clear, shareholders demand a return which compensates them, inter alia, for the specific risk of holding any particular investment. Consequently the mere fact that the real value of the shares has increased over the option period may still represent an unacceptable level of return to the shareholder. It is much more logical that managers should only receive additional compensation (remember that stock options are given on top of their basic salaries, etc.) for generating a more than acceptable level of return for their principals. Alternatively, the indexing of the option price suggested above could be adjusted to reflect the full cost of equity to the shareholders (adjusted to reflect the dividends they receive). Working insight 6.5 suggests a hypothetical index-linking scheme for options.

NO DOWNSIDE?

Although the issues raised above are significant, potentially the most damaging concern regarding stock options is that they represent a one-sided bet for the directors. If the share price appreciates, they make potentially large capital gains; but if the share price declines, they do not lose anything, they simply do not make a capital gain. In such an instance, as the option has no economic value it will not be exercised by the managers, whereas the investors in the company will actually have made a loss due to the decline in value of the shares.

**Working Insight 6.5**

**Index-linking share options**

A company has a share price of \( P_0 \) and a cost of capital \( K_e \), and is due to pay a dividend of \( D_1 \).

The shareholders’ cost of capital will be met by dividend and capital gain:

\[
K_e = \text{dividend yield} + \text{expected growth in share price} = \frac{D_1}{P_0} + g
\]

Therefore expected growth in the share price is \( K_e - \frac{D_1}{P_0} \).

It would be possible to construct an executive share option for which the exercise price rose at the rate of \( g \) per year, thus only rewarding the director if the share price rose above that implicit in the current value.

In practice, the factor of \( g \) might be reduced slightly, to compensate the executive for the risks being taken.
As suggested earlier, one mechanism to address this issue would be for directors to be charged for their options, by reducing other elements of remuneration to allow for a calculated cost of the options. However, this is uncommon in practice.

This problem is exacerbated when the main value drivers for any option are considered (this area is considered in more detail in Appendix 2). One such driver is the relationship between the present value of the exercise price and the current price of the asset. In the case of management stock options, this second factor (the asset value ratio) is normally high because the exercise price is fixed at, or near, today’s price, so that the present value is already below the current market price. In real terms, the option can be described as being ‘in-the-money’ as soon as it is issued. These management stock options are also normally of quite long duration (e.g. three or five years), with a period during which they can be exercised (e.g. six months), all of which increases the value of these share options.

Any option also has value because of its time to expiry (the remaining life of the option) and the expected volatility of the asset price during this period. The latter is vital. It is clearly of no value to have an option to buy something where the price does not move at all; the value of the option is in being able to defer the purchase decision until the actual direction and scale of the movement have been revealed. Thus the greater the volatility, the greater the option value, as illustrated in Figure 6.4.

This is not necessarily in line with the desired objectives of the long-term shareholders in the company. Many institutional shareholders are relatively risk-averse and like a boring existence; they want to see the value of their investments increase steadily over time. Watching the price of the shares leap violently along some roller coaster type time chart is not conducive to the good health of a fund manager, but it certainly can increase the returns from a management stock option scheme.

We are not necessarily suggesting that senior managers deliberately go out of their way to increase the volatility of their company’s shares during stock option periods (although several researchers have indeed noted such a relationship). However it certainly appears strange to offer managers an incentive where they are effectively penalized for creating stability.

It is also true that these stock option incentive schemes do not turn managers into shareholders. Most of the option gains are realized immediately by selling these new shares into the market. Clearly this makes the stock option into a deferred bonus plan, triggered by increases in share price.

**PERFORMANCE CRITERIA USED IN SHARE OPTION SCHEMES**

Many executive share option schemes in the UK attach a condition to the exercise of the options; merely increasing the share price is insufficient. Many different types of condition could be used, but as the majority of UK executive share option schemes grant options based on growth in eps, this measure in particular is examined.

Regular surveys of share option schemes adopted by UK companies show that growth in eps is the major performance measure used to determine whether options are to be granted. Overwhelmingly within companies adopting this
Executive compensation

The target adopted is based on exceeding the movement in the retail price index (RPI) over a period. And in the category of companies using such a benchmark, the most common target is to grow eps in excess of RPI plus 4% or 5% a year over a multi-year period.

Unfortunately, as we have discussed earlier in this book, growth in eps does not automatically translate into shareholder value. In fact, it does not even necessarily translate into growth in the company’s share price.

Share prices are represented by two elements: the eps and the company’s P/E ratio. It would be nice to think that increasing eps leads to a price increase, but unfortunately that forgets the fact that the P/E ratio can move independently. As demonstrated mathematically in Chapter 2, the appropriate P/E multiple for any company is derived from the relative risk of the company together with the future growth in eps which is expected by shareholders. Therefore just because eps increase from one financial year to another does not, of necessity, mean that the share price will increase. If the actual increase in eps is less than had been expected, the share price may actually fall.

Furthermore, even if the company’s growth prospects and risk perceptions remain the same (resulting in a constant P/E ratio), the level of performance
Required growth in eps

In December 2007, inflation in the UK was running at just over 4%. Data from the Financial Times for the FTSE 350 indicated an average P/E ratio of about 12.5; dividend yield of about 3%; and dividend cover of about 2.7 times (implying a dividend payout ratio of about 40%). The yield on UK government bonds was about 4.7%.

We can use these data in the Capital Asset Pricing Model to calculate an average cost of equity for FTSE 350 companies. Assuming a market risk premium of 5% and an average beta of 1:

\[ K_e = R_f + \beta(R_m - R_f) \]
\[ = 4.7\% + 5\% \]
\[ = 9.7\% \]

This cost of equity can in turn be used to evaluate the anticipated earnings growth, taking Equation 2.5 from Chapter 2.

\[ \frac{P/E}{\text{ratio}} = \frac{\text{payout ratio} \times 1}{(K_e - g)} \]
\[ 12.5 = 40\% \times 1/(9.7\% - g) \]

Solving this gives an estimated growth expectation of 6.5%.

What this means is that the share price of the average FTSE 350 company implicitly includes an expectation of growth of 6.5%. Even if we ignore any potential reduction in the P/E ratio as discussed in Chapter 2, this represents eps growth of 6.5% as a minimum, that is, 2.5% above inflation. Shareholder value will only be created if companies generate more than this. And for companies trading on a much higher P/E multiple, the required growth is correspondingly more.

target commonly used often appears inadequate as a driver of shareholder value. As we discussed in Chapter 2, a company’s share price can be deconstructed to determine the level of eps growth inherent in the current market value. Unless the reference base for eps growth is set using very similar growth expectations to those already reflected in the current P/E multiple, value will not be created. Working insight 6.6 illustrates the required growth.

Wherever the target is set, taking eps growth as the performance requirement is a flawed measure.

By definition, an eps growth bonus scheme is based on an accounting measure; in fact, as shown in Working insight 6.7, it is based on a ratio of two accounting ratios.

It is fairly well accepted that the level of essential managerial judgements involved in producing a set of published financial statements means that profits can be moved from one accounting period to another. It is important to remember that such discretion – massaging, manipulation or whatever it is called – cannot increase the total profits made over the lifetime of a project or company (these will always be reconcilable to the total cash flows produced in the same
overall period), but can only change the timing of when they are recognized. However, if the management bonus scheme is driven by the growth from year to year of a profit-focused ratio, the question of timing can become quite financially significant; particularly, as is often the case, when the bonus scheme has a maximum level built in, as delaying excess profit from a very good year can then be advantageous to the managers.

This still doesn’t reflect all the distortions which can be caused by such schemes because, as was previously mentioned and is highlighted in Working insight 6.7, eps-driven bonuses are calculated as a ratio of two financial ratios. These can be restated to show how the bonus can be triggered if profits grow (even if this is primarily caused by a decrease in the effective tax rate) or if the number of shares decrease from year to year. Share repurchase schemes by companies, particularly when offered as an alternative to extra dividend payments, should be carefully reviewed against the incentive schemes in operation for senior executives. It is far more common, however, to find rapidly growing companies which have failed to implement the optimum high growth financial strategy of raising equity because that would, in the short term, have led to a decrease in the eps which were used as the basis for management incentive schemes.

**KEY MESSAGES**

- Executive compensation is paid out in the form of shares, options or cash. All have advantages and disadvantages. The form selected should be one that encourages the appropriate performance, given the company’s business and financial imperatives.
- Likewise, the structure of short- and long-term incentive schemes should reflect the strategic objectives of the business, and should be linked into target performance measures that will create shareholder value if achieved.
KEY TERMS IN THIS CHAPTER

Bonus  Remuneration
eps growth  Share options
ltip (long-term incentive plan)  Total shareholder return (TSR)
Performance measures
PART 2

Financial Strategy and the Corporate Lifecycle

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The start-up stage of the business life cycle clearly represents the highest level of business risk. There are compounding risks associated with whether the new product will work effectively; if it works, whether the product will be accepted by its prospective customers; if it is accepted, whether the market will grow to a sufficient size given the development and launch costs involved; and, even if all this succeeds, whether the company will gain an adequate market share to justify its involvement in the industry.

This high level of business risk means that the associated financial risk should be kept as low as possible during this period. Thus equity funding is most appropriate, but even this equity investment may not be attractive to all potential investors. The high overall risk of the company will attract only those investors who are prepared to accept such a high risk and they will, consequently, require a correspondingly high return. This high return will come in the form of capital gains to the investors because the negative cash flow of the business makes it impractical to pay dividends during this start-up stage. These issues are illustrated in Working insight 7.1.

This dominance of capital gains creates a key concern on the part of the venture capital investors in such high-risk businesses. How do they realize the capital gain which is created if the company is successful? They do not wish to be locked in until the business becomes cash-positive and can start to pay dividends. Hence buyers need to be found for this equity at its increased value, once the company has proved that the product works and that its market potential makes the investment financially attractive.

It is in the interest of all parties that this exit should take place, because venture capitalists normally require very high rates of return on their investment portfolio. As the total risk of the company reduces over its transition from launch to growth, the returns on new capital will inevitably decline. Accordingly the original venture capitalists may not be interested in several

### Financial strategy parameters

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<tr>
<td>Business risk</td>
<td>Very high</td>
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<tr>
<td>Financial risk</td>
<td>Very low</td>
</tr>
<tr>
<td>Source of funding</td>
<td>Venture capital</td>
</tr>
<tr>
<td>Dividend policy</td>
<td>Nil payout ratio</td>
</tr>
<tr>
<td>Future growth prospects</td>
<td>Very high</td>
</tr>
<tr>
<td>Price/earnings multiple</td>
<td>Very high</td>
</tr>
<tr>
<td>Current profitability, that is, eps</td>
<td>Nominal or negative</td>
</tr>
<tr>
<td>Share price</td>
<td>Rapidly growing but highly volatile</td>
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</table>
Start-up businesses and venture capital

Further funding rounds, for which they would have to pay higher and higher prices. Ideally, they want to exit at this point, to realize their gains and to reinvest the proceeds in further high-risk investments. This initial funding can be replaced by equity investors who require a lower rate of return, even though they are still primarily interested in investing for capital growth.

Two attractive exit routes for venture capitalists are a trade sale, or the public flotation of the company on a stock exchange. These have very different implications for management. It is important that entrepreneurs and venture capitalists understand each others’ needs at the start of the investment process: the nightmare for a venture capitalist is to have funds tied up in a successful company for which the owner/directors have no desire to create an exit: until that exit is achieved, the return is not realized.

In many cases, a start-up business will either be very successful or will fail completely; there may be no middle ground. Thus the investor’s outcome is either very good or very bad. Venture capitalists can diversify their investment risk by investing in a portfolio of start-up businesses, rather than in one company only. This also implies that the very high returns apparently demanded by venture capitalists are really ‘promised returns’ which are reduced by the probability of zero returns to a still high, but more realistic level of expected overall return.

INTRODUCTION

It is important for any economy, whether growing or mature, to have a good supply of start-up businesses and industries. These are needed to replenish the employment prospects and wealth creation power of the current mature and declining industries. A major problem for those economies which industrialized first is how to replace many of these now dying industries, on which the past growth of the economy was based. There have been various attempts by governments to acknowledge this importance and accordingly to encourage investment in new areas by giving tax incentives. Unfortunately, as with most such tax-based economic strategies, the results have seldom been successful in terms of achieving the desired aims.

There is, however, no doubt of the strategic importance of this start-up category of business and this is true whether it is a stand-alone company or is created as a division of a larger business. The key issues regarding the appropriate financial strategy are the same; thus in this chapter the stand-alone company will be discussed initially but the impact of the new business being part of a group will also be considered.

1 One way in which the venture capital investors may choose to ensure such an exit is to write a clause into the shareholders’ agreement which states that if the company has not floated or been sold or engineered another form of exit say within 5 years, the venture capitalists are entitled to an increasing percentage of profits each year as a special dividend. This focuses the management’s attention on the need to achieve an exit, and at least gives the venture capitalist a running yield while they await exit.
Figure 7.1 illustrates a possible sequence of risks accepted by the investor in a start-up business which has little more than a concept.

The first stage of many start-up businesses requires investment in research and development in order to try to identify new product concepts which may be worthy of closer investigation. This is the pre-launch stage of the business, and funding at this stage is often referred to as *seed capital*. This stage will extend to the production of prototypes, to prove the viability of the concept. Alternately, the product concept might already be proven, but this first business stage will require expenditure on market research to determine whether there is truly a valuable commercial opportunity.

If the product opportunity still appears financially attractive after these investments have been made, there is normally considerable additional expenditure required for operating facilities (such as production plant for a manufactured good), support facilities, and initial sales and marketing activities before the product can actually be launched. For most products, these early stages of launch and sales development are periods of net cash outflow. The inflows from sales revenues are not only small but delayed, while the cash outflows still include high levels of one-off launch-associated costs as well as the normal ongoing operating expenses.

Capital invested at this stage, slightly less of a gamble than seed capital but still enormously risky, is known as *start-up capital*. Some venture capital companies (and some of their individual counterparts, known as *business angels*) have a preference for investing only at the seed stage, others only invest in start-ups. (Still others, who may call themselves venture capitalists, only invest in large, safe deals such as management buyouts or development capital for established companies. These investors provide private equity, but the term ‘venture capital’ should really be restricted to use in high-risk situations. The mechanics of buy-out deals, which use very high levels of debt in a relatively low business risk environment, are discussed in Chapter 17.)

Seed and start-up funds are invested in the hope of the successful development of the product and the resulting high ultimate net cash inflows when the sales volumes finally mature. Clearly there are very significant business risks associated with this start-up strategy. Each subsequent stage is dependent on the successful completion of the earlier stages; hence a decision tree type of financial analysis can be used.

### Figure 7.1

<table>
<thead>
<tr>
<th>Research and development</th>
<th>Prototype and market testing</th>
<th>Production and commercialization</th>
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Initially the project is subject to the successful identification of a marketing opportunity in an area where the business believes it either has or can develop a sustainable competitive advantage. This marketing opportunity frequently requires the business to solve some technical problems before it can be exploited. The launch of the product therefore depends on a successful outcome of the research and development activity as well, but even then the existence of the market demand has to be confirmed. In other words the product may work as expected but the expected customers may not materialize to buy it. The size of the ultimate market is also vitally important because the total investment will be financially justified on the cash inflows from these predicted sales. Success will depend upon the level of market share: not only that achieved during the launch phase, but also how it is developed and retained through the growth and maturity stages of the life cycle.

The compounding sequential risks lead to the conclusion that the start-up phase is a very high-risk stage of the life cycle; therefore logically a correspondingly high return should be required. This is intuitively self-evident. However, it is not at first sight in accordance with financial theory.

If the rationale of the Capital Asset Pricing Model (CAPM) were strictly applied, the increase in return would only be related to the level of market (or systematic) risk incurred by the company; that is, the degree to which the company’s total return is affected by changes in the return of the market. The specific sales opportunity and, particularly, the required solution of a technical problem may be almost completely unrelated to any changes in the overall market, so that their appropriate beta factor would be zero. Only once the company has become established might be the ultimate level of sales and the subsequent cash inflows be much more affected by changes in the market as a whole, so that the beta of these later cash flows would be higher. Under the CAPM, the beta drives the required premium return over the risk-free rate, so a CAPM analysis would seem to indicate that the required rate of return could start relatively low but would need to increase over the life of the product. This is counter-intuitive to the trend of business risk.

The argument of the pure theorist is that the very high business risk at the start of the product’s life cycle is almost exclusively caused by the unique risk associated with the product. Therefore this can be diversified away by rational investors, who would always incorporate this high-risk investment into an efficiently constructed portfolio. (This does not mean that the company can only undertake such start-up product investments as part of a widely diversified portfolio of products. As has already been discussed, since investors can themselves easily diversify away unique company risk they will not pay extra for companies to do this for them.)

The dramatic implication of the CAPM theory is that a start-up business does not need to offer significantly enhanced rates of return to investors to compensate for the high business risk because this is mainly unique, diversifiable risk. Yet in practice the returns demanded by investors in new business start-ups are
significantly higher than for more mature companies. Does this represent an inefficiency in the market, a breakdown in the theory, or both?

The answer is no to all the above questions, because the apparently relatively low return expected by these rational diversified investors under the theory would be based on the probability-adjusted expected value of the cash flows of the company.

For a start-up business the range of its expected cash flows is going to be very wide, due to all of the volatilities discussed earlier. As explained, the high standard deviation (volatility) of these future cash flows can be regarded as being caused primarily by the unique or unsystematic risk of the company, and therefore it does not lead to an increased expected return. The true expected value of the resulting cash flows is going to be depressed however due to the sequential probabilities which need to be applied to each subsequent stage of the project. As illustrated in Working insight 7.2, the investments required in

<table>
<thead>
<tr>
<th>Years</th>
<th>Forecast annual cash flow (£millions)</th>
<th>Probability of success of previous stage</th>
<th>Cumulative probability factor</th>
<th>Probability-adjusted expected annual cash flow (£millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(2)</td>
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<td>(2)</td>
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<td>0.6</td>
<td>0.3</td>
<td>(1.2)</td>
</tr>
<tr>
<td>4</td>
<td>(6)</td>
<td>0.8</td>
<td>0.24</td>
<td>(1.44)</td>
</tr>
<tr>
<td>5–15</td>
<td>10</td>
<td>0.8</td>
<td>0.192</td>
<td>1.92</td>
</tr>
</tbody>
</table>

Explanation of final column figures:

The expenditure of £4 million in year 2 is dependent on the success of the development activity in year 1. As this success is only a 50% probability, it is not certain that £4 million will be spent in year 2 (while it is certain that £2 million will be spent in year 1); hence the expected value of £2 million (£4 million at a probability of 50%) for year 2. As each successive stage is conditional on the success of all the preceding stages, the cumulative probability factor is the product of all these probabilities. Thus there is less than a 20% chance that the £10 million annual cash flow will be received from years 5–15.
the very early years of the product’s development are much more certain than the subsequent cash flows, which depend on the successful conclusion of all the earlier stages; thus the expected values of these later cash flows are significantly affected by the cumulative probability factors which need to be applied.

The application of the (subjective) probability factors results in the less certain cash inflows being reduced in both expected value terms and in present value, not by having an extremely high discount factor applied to them directly, but by being assessed as expected values before being discounted. Clearly the overall effect of the two approaches is similar, because by using probability-weighted expected cash flows the unique risk of the investment has already been taken into account so that only the market-related risk remains. In Working insight 7.3 net present values (NPV) are compared if the original cash flow estimates given in Working insight 7.2 are discounted at 35% per annum (a high-risk discount rate) and if the probability-adjusted expected cash flows are discounted at 12% (a more normal company cost of capital rate).

From Working insight 7.3 we can see that although the approaches are similar, they give different results. The use of probability-adjusted expected cash flows is greatly to be preferred over the alternative use of a much higher-discount rate. It is theoretically more sound, if only for the reason that the discount factor is applied to all cash flows, whereas normally it is only the cash inflows that are uncertain – costs can often be forecast with reasonable accuracy, but the emergent market is an unknown.

(We should however point out that, as in many similar cases in finance, theoretical soundness tends to lose out to ease and accepted practice. Most companies and investors apply higher discount rates in these situations rather than using probability-weighted expected values for the cash flows together with a lower discount rate. Similar examples can be cited of NPV and residual income being conceptually superior to internal rate of return and return on investment respectively, yet in practice the latter methods are more widely used.)

### WORKING INSIGHT 7.3

#### Comparison of NPV calculations

<table>
<thead>
<tr>
<th>Year</th>
<th>Probability-adjusted cash flows</th>
<th>Unadjusted cash flows</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expected annual cash flows (£millions)</td>
<td>Discount factor at 12%</td>
</tr>
<tr>
<td>1</td>
<td>(2)</td>
<td>0.893</td>
</tr>
<tr>
<td>2</td>
<td>(2)</td>
<td>0.797</td>
</tr>
<tr>
<td>3</td>
<td>(1.2)</td>
<td>0.712</td>
</tr>
<tr>
<td>4</td>
<td>(1.44)</td>
<td>0.636</td>
</tr>
<tr>
<td>5–15</td>
<td>1.92</td>
<td>3.774</td>
</tr>
<tr>
<td></td>
<td>Net present value</td>
<td>+2.10</td>
</tr>
</tbody>
</table>
In the example in Working insight 7.3, the 35% rate is arbitrarily applied to all the cash flows including the very early expenditures which are relatively certain (e.g. the £2 million investment in year 1 is guaranteed to be incurred, and the £4 million expenditure in year 2 has a 50% probability). Instead, the use of expected cash flows highlights the rapidly increasing value of the project as a successful outcome becomes progressively more likely.

In Working insight 7.4, the present values under the two methods have been recalculated as if the expenditure in year 1 has now been successfully completed. This now increases significantly the probability of receiving the £10 million cash inflows and therefore the NPV is also increased dramatically, even though the same discount rate of 12% is applied. In order to reflect the higher probability of success under the other method, the risk-related discount rate should be reduced as each stage of the project is completed. Unfortunately in practice it is

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual cash flow (£millions)</th>
<th>Probability of success of previous stage</th>
<th>Cumulative probability factor</th>
<th>Probability-adjusted expected annual cash flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(4)</td>
<td>N/A</td>
<td>1</td>
<td>(4)</td>
</tr>
<tr>
<td>2</td>
<td>(4)</td>
<td>0.6</td>
<td>0.6</td>
<td>(2.4)</td>
</tr>
<tr>
<td>3</td>
<td>(6)</td>
<td>0.8</td>
<td>0.48</td>
<td>(2.88)</td>
</tr>
<tr>
<td>4–14</td>
<td>10</td>
<td>0.8</td>
<td>0.384</td>
<td>3.84</td>
</tr>
</tbody>
</table>

Probability-adjusted cash flows

<table>
<thead>
<tr>
<th>Year</th>
<th>Expected annual cash flows (£millions)</th>
<th>Discount factor at 12%</th>
<th>Present value</th>
<th>Unadjusted cash flows (£millions)</th>
<th>Discount factor at 35%</th>
<th>Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(4)</td>
<td>0.893</td>
<td>(3.57)</td>
<td>(4)</td>
<td>0.741</td>
<td>(2.96)</td>
</tr>
<tr>
<td>2</td>
<td>(2.4)</td>
<td>0.797</td>
<td>(1.91)</td>
<td>(4)</td>
<td>0.549</td>
<td>(2.20)</td>
</tr>
<tr>
<td>3</td>
<td>(2.88)</td>
<td>0.712</td>
<td>(2.10)</td>
<td>(6)</td>
<td>0.406</td>
<td>(2.44)</td>
</tr>
<tr>
<td>4–14</td>
<td>3.84</td>
<td>4.226</td>
<td>16.23</td>
<td>10</td>
<td>1.118</td>
<td>11.18</td>
</tr>
</tbody>
</table>

In order to generate the same NPV as given by the probability-adjusted flows, the discount factor used on the gross expected cash flows would have to be reduced to approximately 27%.
very difficult to develop meaningful risk measures for such discrete elements within a total business project.

**REAL OPTIONS**

Most forecasts turn out to be wrong. This is not necessarily a problem: much of the value of the forecasts lies in the act of preparing them, and the considerable thought and analysis that goes into the underlying business assumptions and sensitivity analysis. However, circumstances change, and there is value in being able to adapt to this.

Options give you the right to do something, but do not require you to do it. We discuss financial options in Chapter 11, and expand upon them in Appendix 2. Here, we consider the practical and strategic implications of conducting a business so as to create real options. This is a relatively new branch of finance which considers the value of flexibility and having the option to change plans, or to develop a larger business from an initial pilot study.

Working insight 7.4 showed that if the project did not fulfil early expectations, the managers would terminate it rather than continue making losses and destroying shareholder value. If stage 1 were unsuccessful, the company would not invest another £4 million in stage 2. This highlights an interesting aspect of discounted cash flow (DCF) analysis. The way that we set out forecasts in DCF analysis, and calculate the expected probabilities of success, indicates a static position. It implies that this is what will happen, and ignores the flexibility that a change in circumstances could bring.

This can be misleading. For example, a forecast to support a 10-year investment in rental property will assume that the building is sold at the end of year 10. But if property prices have crashed during that final year, there is value in the investor’s ability to defer the sale decision until the market rebounds: there is no compelling reason to stick to the original forecast and sell at a loss. Likewise, faced with a property market that had tripled in value over a 5-year period, the investor might just decide to take advantage of the bubble, and sell out at a high – there is no requirement to keep the investment for the period originally planned.

Working insight 7.5 gives some examples of where flexibility can add value to a business.

The financial techniques behind the evaluation of real options are varied. There are several excellent books and articles on the subject, and we do not dwell on them here. What is important to us is how real options fit into corporate financial strategy.

Real options represent a different way of looking at the present value of growth opportunities (PVGO), introduced in Chapter 2. The value of a company represents the value of its assets-in-place plus the NPV of its future activities; the real options are what gives the company that PVGO. This being the case, it is obvious that companies should conduct themselves in such a way

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2 Stewart Myers wrote about real options in 1977. We take the view that is relatively recent.
Some examples of the value of flexibility

Multi-stage projects
If a project can be split into stages, rather than investing in the whole thing up-front, then it can be assessed at each stage to see if it is still worth proceeding. This minimizes the risk, and also reduces the amount of cash needed at the start of the cycle. Working insight 7.2 gives an example of a multi-stage project: the investment is made over a series of years rather than all at the start, which gives a chance to abandon it if the financials become unattractive.

Timing flexibility
If an investment can safely be delayed without handing over a strategic advantage to competitors, then there can be an advantage in delaying it to learn more about the potential market and pitfalls. This reduces risk and delays cash outflows (although, of course, it may also delay the associated cash inflows).

Alternative uses
An investment in assets becomes more valuable if those assets have more than one possible use. This applies both to tangible assets and to intangibles. For example, a conference hall with fixed seating is potentially less valuable than one where the seating can be removed to accommodate a broader range of activities. Similarly, a brand that is recognizable in two sectors is potentially more valuable than one with success in only one market.

Growth potential
Sometimes, it is worth undertaking a small project, with no profit potential, in order to gain entry to a potentially larger market. The cost of the small project (its negative NPV) can be seen as the price paid for the option to grab the later market opportunity should that arise. For example, a company might make a strategic decision to bid for an unprofitable contract, solely to establish itself as a capable player in a particular market. The loss on the contract is a price worth paying in order to gain future, profitable business.

Exit option
The ability to terminate a loss-making venture has great value. For example, a business committed to paying high rents on an unbreakable 20-year lease might regret not having paid a small premium up-front to negotiate a break clause.

as to maximize their strategic options, thus creating several paths for value generation in the future.

Later in this chapter we will discuss corporate venturing. This is a good example of real options in practice. The large corporates put money into small start-up businesses on the assumption that although many will fail, some will develop valuable intellectual property and become commercial successes. The sums invested by these corporate venturing arms are the cost of the option – worth making because of the potential payoffs, which might ultimately be realized in the form of an acquisition of the venture partner in order to acquire technology, or its sale, making a capital gain, or in another way, as yet unforeseen.
As we have already explained, the required returns on start-up investments are very high, to compensate for the very high risk. But these returns are not always made – venture capital investors need each investment to promise the potential of very high returns in order to compensate for those that fail completely.

Overall a portfolio of such venture capital investments should produce an acceptable return over time. In the example given, the increase in NPV of the successful investment of £2 million in year 1 would balance the cost incurred by another similar scale project which was aborted at the end of year 1 because of lack of success in its development activity.

If a portfolio of similar projects actually achieved the predicted success rates, as it should do if appropriate probability estimates are used, there would be no net increase in the NPV of the portfolio over the life of the projects after writing off the expenditure incurred on all projects, both successful and cancelled, that is, the portfolio would deliver the original return expected at the outset. However, the NPV of the totally successful projects would increase dramatically as that success became more certain. Unfortunately, in an efficient market it is supposed to be impossible to outperform the market which would clearly be achieved by selecting only that 19.2% of the projects like that in Working insight 7.2 which would actually be successful, rather than investing in a portfolio including more losers than winners.

The conclusions that can be drawn from this analysis are that the very high-business risk associated with new start-ups is taken into account in the return expected by investors applying the CAPM theory, but not by directly increasing the discount rate to include the unique risk of the company.

On a practical basis, this has very important implications for companies trying to raise start-up capital and for venture capital fund managers. The very high rates of return required by most venture capital fund managers (in the UK a post-tax compound annual rate of return of 40% is quite normal) to evaluate potential start-up investments must be applied to the expected cash flows assuming a successful outcome. Much lower beta-driven rates of return must be applied to future cash flows which have been adjusted to reflect the probability weightings of this successful outcome.

It is vitally important that the cash flow projections resulting from the business plans of prospective start-ups are compiled in a manner totally consistent with the way in which they will subsequently be valued by the venture capitalist. Unfortunately, it is not uncommon to find entrepreneurs preparing their plans on a very prudent basis and incorporating decision trees and probabilities to produce the adjusted best estimate expected cash flow, and then for this to be discounted by the venture capitalists at their very high, risk-inclusive, required rates of return. Not surprisingly the resulting investment valuation does not normally look too appealing to either party.

This argument can be even more important when the start-up project is within an existing large group. Most large groups now use increased discount rates to evaluate investment projects which appear to have higher than normal levels of risk. However, this risk assessment normally includes all the aspects of risk associated with the new project, whether these are unique to the project
or reflect the systematic risk. More critically, the resulting high, risk-inclusive discount rate is often applied to project cash flows which have already been subjected to the application of sequential, cumulative probability factor weightings. Consequently, the major element of the project risk is included in the evaluation twice, and these large groups find it very difficult to approve investments in new products or in any area with higher than normal risk levels.

NEED FOR LOW FINANCIAL RISK

The required inverse correlation of business and financial risk discussed in Chapter 4 leads to the logical conclusion that start-up businesses should be funded by equity, preferably with no debt financing at all. It is important to see if that conclusion is supported by the relevant finance theory. In a perfect market, there is no added value from different capital structures but the effects of taxation and costs of financial distress discussed in Appendix 1 do indicate that capital structure is important to companies.

Merely using these two market imperfections highlights why start-up companies cannot gain from the use of debt financing. If having any level of debt in a company increases the risk of default, investors will reduce the value of the investment by at least the expected value of any costs associated with such default or earlier stage of financial distress. Therefore a key factor in assessing the importance of potential financial distress is the relative level of costs which are likely to be incurred in the event of such financial distress. Where the underlying assets of the business are relatively discrete with clearly established, high realizable values the costs of financial distress are likely to be quite low. However, for most start-up companies the current investment value is created by the present value of the expected future cash flows which will result from the successful development, launch, and growth of the product. Thus the assets underlying the business are intangible, without any easily established discrete realizable values; this means that the costs of financial distress are likely to be very high for a start-up business.

The other key component determining the total impact of the risk of default is the likelihood of it occurring. This obviously increases with the relative proportion of debt financing used by the business, but for a start-up company the risk can be high if even a small proportion of debt funding is raised. The high risk of complete business failure means that no cash inflows may actually be generated, so that any level of outstanding debt would lead to a state of severe financial distress.

A high probability of occurrence combined with a high cost if it occurs makes the risk premium required for potential financial distress very high; thus making debt financing unattractive from this perspective.

At the other end of the capital structure analysis was the benefit created by the tax shield effect of debt financing. However the start-up business may well be making accounting losses or very nominal profits in its early years of operations so that there is no positive impact to be gained from debt financing either.

Quite apart from the issues of risk correlation and financial theory, there is a practical reason why start-up businesses should not be financed using debt.
Start-up businesses and venture capital

Start-up companies have a large and growing demand for cash flow, as illustrated by Ocado in Case study 7.1. Taking on debt involves making regular cash outgoings to service the interest and repayments; that cash would be better used within the company to drive the growth.

(We should point out that in practice we have known businesses started up on the back of the entrepreneurs’ credit cards, due to their inability to convince financiers of the validity of their arguments. Some of these have worked; others have not. Our thesis is that this compounding of risk is not a good idea – not that it never happens.)

### NIL DIVIDEND PAYOUT POLICY

This leads to consideration of another aspect of finance theory: dividend policy. In theory, investors should be indifferent as to whether they receive dividends or achieve their return through capital gains; yet the recommended dividend policy for a start-up company is to pay no dividends at all.

The cash flow of a newly formed business is normally highly negative and new funds are needed for the investment opportunities available to the company. If debt financing is inappropriate this funding has to be by equity, which means that if investors require a dividend they would have to invest more money into the business to pay for this dividend. In a perfect capital market this would be perfectly acceptable and, indeed, many finance textbooks go to great lengths to demonstrate how it doesn’t make any difference to the investors.
This is, of course, fairly obvious if there are no taxes and no transaction costs. Unfortunately, in the real world both exist and the transaction costs associated with raising new equity funding are considerable for high-risk start-up businesses. Not only are the costs high but they are relatively fixed, which means that to raise small amounts of equity is exorbitantly expensive. These costs cover the legal and professional fees charged, where the work involved does not vary in accordance with the amount of money being raised. Hence it is not logical to pay dividends and replace the funding by raising new equity investments.

Further constraints include the tax and legal positions on dividends. Dividends are not a tax-deductible expense for the company but are taxable on the investor, so there is a tax penalty involved. Also the company may not legally be able to pay dividends as it must have distributable reserves (principally undistributed post-tax profits) out of which to declare dividends. Many loss-making new businesses will have no such accumulated profits and so cannot legally declare dividends.

**VENTURE CAPITAL INVESTORS**

The ideal equity investors for start-up companies must appreciate the risks involved, including the potential for a total loss of their investment, and must want to receive their financial return in the form of capital gains. These venture capitalists are normally professional investors (including investment managers controlling venture capital funds) who attempt to compensate for the high risks associated with any specific investment by developing a portfolio comprising similarly high-risk individual investments. They hope that the complete failure of some investments in the portfolio will be offset by the outstanding success of other investments made. Many venture capital investors specialize in particular industry sectors, such as information technology or bio-technology, but hold a portfolio of investments in the sector, taking the view that the sector will produce winners, but spreading the risk on the individual companies.

Using the logic developed earlier in this chapter, such a focused portfolio would clearly deserve the beta for the particular industry sector. This should enable a risk-adjusted discount factor to be developed, incorporating the appropriate level of market-related risk premium, but the unique project risks must still be included by the use of probability-weighted expected cash flows. The argument used by many such focused, yet portfolio-diversified venture capital fund managers is that they are confident that the particular industry (say bio-technology) will generate some major new companies in the future, but they are less confident of their ability to pick out these specific companies at this very early stage. Hence by investing in a broad range of the high potential growth companies in this industry, it is hoped that the venture capital fund participates in the success of the few; even at the expense of making many more unsuccessful investments.

Further, contrary to common perceptions, venture capitalists generally act in a risk-averse manner, inasmuch as they manage their risks by limiting their investment portfolios to sectors they understand. Thus some venture capital firms will only invest in certain sectors – or will not invest in other sectors.
Their industry specialism gives them a greater knowledge of the issues, thus reducing their investment risk. Others will limit their investment portfolio to a particular geographical area, or to a particular size of investment, with which they have experience. Venture capital is about making investments with the potential to generate high returns; it is not about taking unnecessary risks.

There is also the problem that, even for the successful investments, there may be a long time gap between the development of the new technology and the cash-positive maturity stage of the resulting products. This factor proved particularly interesting during the dot.com boom of the late 1990s, during which many ‘incubator’ firms were formed to invest in and nurture very early stage investment opportunities. These incubators mostly had a fundamental flaw in their own financial strategies: the funds outflow to the investee company occurred immediately; if exits were not possible through the anticipated early flotation the incubator still had to find cash flow to support its own level of expenses. Many of the incubators, including some high-profile ones, followed their investee companies into liquidation.

Many venture capitalists have a relatively short investment time horizon. This is logical as they wish to focus on investing during the high-risk start-up period of a business; if it succeeds, they want to realize their resulting capital gain and reinvest this in more new start-up investments. Therefore, being locked into any particular company, no matter how successful it is, is not an attractive proposition for the investor. It should not be regarded as attractive by the company either, unless the venture capitalist is prepared to accept a reducing level of return as the associated risk is reduced. This is not usually the case, so that it is mutually beneficial to find new equity investors who are willing to buy out the venture capitalists well before the company has become cash positive and dividend paying. This refinancing issue is discussed as part of the transition from start-up to growth stage in Chapter 8.

**BUSINESS ANGELS**

As mentioned earlier, individuals who invest in venture capital opportunities are known as business angels. Often these individuals have made money in their own enterprises and are seeking the excitement and the financial reward of investing in another’s business.

Business angel investment is often more informal than that from specialist venture capital companies: the documentation is much simpler, and the deal can be done more quickly due to the individuals being satisfied with doing less due diligence. Angels’ decision criteria for investment include having a favourable impression of the management team, a familiarity with the sector, projected financial rewards, and a synergy with their own skills.

Companies which have used angel investment report both good and bad experiences with it. On the positive side, angels will often rush in where venture capitalists fear to tread, and will provide finance for investment opportunities that have been unable to attract it otherwise. They will invest much lower amounts than traditional venture capitalists (which they can afford to do as their fixed costs per deal are much less than those of the venture capital companies).
Also, they may be a lot more flexible in their approach, prepared to invest for the longer term, and are able to provide management skills which the entrepreneur may lack. However, the negatives of angel investment include the fact that they rarely have ‘deep pockets’ and so cannot invest in second and third round financing. Also, individuals who have made money in their own companies might have a ‘Midas complex’, believing that their judgement is infallible, or may be seeking to ‘buy a job’ by using a redundancy package to buy into another company.

CORPORATE VENTURING

An alternative to traditional venture capital, or even to angel capital, is to accept funding from a large corporate that is undertaking corporate venturing. Many businesses, such as Cisco and Siemens, have large corporate venturing arms, the aim of which is twofold. Firstly, these companies invest in promising new ventures in order to exploit their ideas, to obtain the benefit of their new technologies and gain an edge on the market (interestingly, the CIA in America reportedly also does this, for the same reasons). Secondly, corporate venturing can prove profitable for these companies, in the same way that it provides a good return for professional venture capitalists.

Accepting investment from a corporate venturer can provide useful financial support, and give access to a wide range of useful business contacts. If the venturer has a portfolio of investments, there might also be synergies between the different businesses. If it is in a related industry, there can be a lot of spin-off benefits. And, as with high profile venture capital investors, having a significant investor can add to a company’s profile in the business and investment communities. Case study 7.1 showed how John Lewis, the retailer, is an investor in Ocado, to mutual benefit.

However, there are three main issues to consider before accepting funding from a corporate venturer.

1. Does each party understand the other’s motivation? In particular, it is important to understand whether the venturer is expecting to buy out the investee business once it has developed its products and grown. (In this vein, it is also vital to understand the shareholder agreement with the venturer – often these contain ‘first refusal’ clauses that can prevent the investee company selling out to another party should the opportunity arise.)

2. Is a reciprocal arrangement planned whereby the venturer will provide business advice and contacts (similar in some ways to an incubator)? If so, does the venturer have a good track record in this area? Often the planned advice and contacts fail to materialize, at least to the extent promised at the start of the deal.

3. How important is the investee business to the venturer? Many companies moved into corporate venturing at the heart of the dot.com boom, only to retreat again once the bubble burst, leaving their investee companies without recourse to the anticipated further funds.
Start-up businesses are high-risk investments, and the investment industry has developed a series of mechanisms to protect its position. Broadly, these mechanisms ensure that the venture capitalists can exit the investment when the opportunity presents itself, and that they do not suffer too much if the investee company does not perform as originally expected. Some common examples of these clauses in investment agreements are given below.

**Drag-along rights** apply if an offer is made for a company. They give the majority shareholder who wishes to sell, the right to force the minority to join in the sale, on the same terms. This prevents minority shareholders from stopping the deal taking place. The corollary to drag-along is **tag-along rights**, which provide that an offer made to one shareholder, or group of shareholders, has to be made to the other shareholders too. Tag-along is a mechanism to prevent one shareholder from selling out on very good terms which are not available to the others.

Another clause which may assist the venture capital investor is the **anti-dilution protection**. Most start-up companies need several rounds of finance, and the expectation is that each round will be at a higher-share price, because the business has become more valuable. However, should the business suffer a setback, the issue price might go down. In normal circumstances this would mean that unless they invested further at the new price, the existing investors would be diluted by the new, cheaper shares. The anti-dilution protection means that in the event of a ‘down-round’ (shares being issued at a lower price) some or all of the venture capitalist’s existing shares will be re-priced as if they had been issued at this lower price, thus increasing the number of shares and minimizing the dilution.

Further types of clause, such as liquidation preference, are in more general use, and are explained in Chapter 11 on financial instruments. In addition to these specific types of clause, companies accepting venture capital investment should expect to allow the investors board seats, a veto over capital expenditure and budgets, and other control rights.

**YOUR START-UP BUSINESS**

Many years of experience in advising entrepreneurs and start-up businesses have left us with a desire to pass on some pointers to prospective entrepreneurs.

1. Are you suited to entrepreneurship? Often, middle managers from large companies take a redundancy package and decide to invest it in running their own business. The skills required for this are completely different to those needed in a large company: why are you doing this and do you have what it takes?

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3 We are hoping to be able to apply this type of provision in our own lives, being able to improve prices retrospectively every time we make a purchasing error. As yet, most retailers are unwilling to co-operate.
2. Minimize the level of fixed costs. As we have mentioned several times, the level of income for a start-up is an unknown factor – the expenses are bound to happen. Defer all expenses that you can, and minimize the risk of the business by making as many of those costs as possible into variable rather than fixed costs. This may at times lead to a higher overall price being paid for some services, but it is essential to reduce cash outflows until the pattern of inflows is established.

3. Prepare a detailed cash flow forecast. Integrate this with a forecast profit and loss account and balance sheet, to ensure that it makes sense. (If you do not have the ability to prepare the forecast yourself, use the services of a professional advisor, but make sure that the underlying assumptions are yours, not theirs.) Appendix 3 explains more about the preparation of forecasts.

### KEY MESSAGES

- Start-ups carry a high business risk and so their financial strategy should be low risk. This means equity finance, by venture capital investors, with no dividend payout but seeking a high capital gain.

- In evaluating risky investments, probability-adjusted cash flows can be discounted at a ‘normal’ cost of capital. Failing this, the base forecast cash flows should be discounted at a cost of capital that has been increased to allow for the risk. Although this latter method is the most common, the former is intellectually more attractive and leads to fewer errors.

- Venture capital can come from specialist investment companies, from commercial companies in the form of corporate venturing, or from individuals, known as business angels.

- Companies raising venture capital can expect to have to give special protection to their investors, via the share agreement.

### KEY TERMS IN THIS CHAPTER

- Anti-dilution
- Business angel
- Corporate venturing
- Discount factors
- Drag-along
- Expected values
- Real options
- Seed capital
- Start-up
- Tag-along
- Venture capital
Growth companies: Marketing focused

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Continuing high business risk 145
Calculating the cost of equity 147
  Capital asset pricing model 148
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Reinvestment projects 150
Rights issues: Concept and practice 153
Bonus issues and share splits 160
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Key terms in this chapter 163
Once the new product has been successfully launched into its marketplace, the sales volumes should start to grow rapidly. Not only does this represent a reduction in the overall business risk associated with the product, but it also indicates the need for a modification in the strategic thrust of the company. The key emphasis of the competitive strategy should now be placed on marketing activities in order to ensure both that the total growth of product sales is satisfactory and that the company increases its market share of this expanding sales volume.

These critical issues show that the business risk, although reduced from the start-up stage, is still high during the period of rapid sales growth. Thus the appropriate source of funding must be designed to keep the financial risk profile low, which indicates continued use of equity funding. However, an important aspect of managing the transition from start-up to growth is that the initial venture capitalist investors will be keen to realize their capital gains in order to enable them to reinvest in other new start-up businesses.

This means that new equity investors need to be identified to replace the original venture capital and to provide for any continued funding needs during this period of high growth. The most attractive source of such funding is often from a public flotation of the company.

The higher sales volumes which should now be achieved at quite reasonable profit margins will generate much stronger cash flows than during the start-up stage. However, the company should be investing heavily in both overall market development and market share development activities, as well as requiring investments to keep pace with the increasing levels of operational activity. Consequently, the cash generated by the business is required for reinvestment in the business with the result that the dividend payout ratio will remain very low. This should not be a problem for the new equity investors in the company because they will have been attracted primarily by the prospects of high future growth.

These growth prospects should be reflected in a share price that shows a high price/earnings multiple applied to the low existing earnings per share (eps)
of the company. As the dividend yield is very small, the bulk of the investors’ expected return has to be generated as capital gains, by increases in the share price. This means that the company has to produce substantial growth in eps during this stage of development; this should be achieved by winning a dominant market share in the rapidly growing market. These issues are illustrated in Working insight 8.1.

It is important to realize that it is during these first two stages of the product life cycle that the company has its main opportunities to develop the sustainable competitive advantage which it will utilize during the later, cash positive, maturity stage.

CONTINUING HIGH BUSINESS RISK

This need to develop the sustainable competitive advantage is a good indicator of the level of business risk which is carried over from the start-up stage into this growth phase of the life cycle. For most companies, the major entry barriers to the industry are constructed during the rapid growth period so as to prevent competitors following the company’s competitive initiatives once the product’s potential has been identified. These barriers can take many forms, such as the development of strong branding (which differentiates the product in the minds of customers), and the early achievement of significant economies of scale or learning curve cost reductions (which establish a potentially sustainable position as the low-cost producer in the industry).

There are obviously significant risks associated with the implementation of each of these competitive strategies and they all require considerable up-front investment by the company, which is financially justified on the expectation of the future long-term growth in the sales of the product. Thus for these companies the level of business risk remains high because these risks must be considered alongside the risks that the anticipated growth in demand will not fully materialize. However, some companies can enter this stage in a more confident position, as their competitive advantage has already been well established during the start-up phase.

A classic example would be in the pharmaceutical industry where a completely new drug would normally have been patented as early as possible. If the subsequent development process, the clinical trials, and the actual product launch are successful, the patent guarantees its owner a finite period of sustainable competitive advantage during which the returns are predominantly governed by the total growth of demand for the product. The substantial contribution of a single product, Zantac, to the Glaxo pharmaceutical group’s tremendous financial success during the 1980s and early 1990s clearly highlights this point. The converse to this is, of course, that the development costs of such a new product are immense and the associated risks of failure very high; it simply means that the major risk-taking period is earlier in the life cycle for some industries than others.

Another reason that the business risk of the growth phase is still high is that the transition from start-up to growth requires a number of changes to be implemented by the company. Change always implies risk as, if the change is
not managed properly, it can lead to a downturn in the future performance of the business. Where the required changes are significant and wide reaching, the level of increased risk that results is also greater. An obvious area of change is in the strategic thrust of the company. During their start-up periods, most businesses would have concentrated on research and development, either in order to exploit an identified market opportunity or in the hopes of creating one through a technological breakthrough. Even in its latter stages where the product was being prepared for launch, the main emphasis would have been on problem solving as quickly as possible. Delays in getting the product into the marketplace can prove extremely expensive if, as a consequence, a competitor is able to establish its product first, or if the window of opportunity has simply been closed during the period of delay.

Once the product has been successfully launched, the company should concentrate its efforts on building both the total market and its share of this expanding market. This requires a marketing focus on the part of senior managers rather than the R&D or technology focus which may have been more appropriate during its earlier years. A fundamental change in management focus is not easy to achieve (without changing the managers) and so the scale of the required change is important in terms of the risk associated with this transition. If the company’s original product development strategy was very market oriented, the change may not be that great. However, for many very high technology businesses the requirement to focus on the needs of customers rather than solving stimulating intellectual problems has proved very difficult to manage.

In addition to the change in business focus, the growth stage brings with it the need for a change in business processes. Small organizations can thrive on informal systems, but as the scale of operations grows, and the number of employees and divisions increases, there is a need for more structure. Managing this transition is another contributor to the level of business risk.

As mentioned in the previous chapter, there also needs to be a fundamental change in the investor profile during the transition from start-up to rapid growth style of company. The venture capitalist is the ideal shareholder for the newly formed very high-risk company, but it is not appropriate for the company to retain this investor base as it moves through the growth stage. However, the continuing high business risk associated with most rapidly growing companies means that low-risk financing is still appropriate. This requires finding new equity investors who are prepared not only to buy out the original venture capital shareholders but also to provide any funding needed during this period of rapid growth.

These new investors are taking on a lower risk investment than did the venture capitalists, because the product is normally now proven and at least some customers will have accepted the specific product offering of the company. Also the company is now much more substantive than the business plan and product concept which it may have comprised when initial financing was being raised. Hence it is possible to look to raise this new equity funding from a broader potential base of investors, possibly including the general public.

In most countries there are much tighter rules applying to the control of companies which wish to raise funds from the general public (even though the regular reporting of financial scandals in major public companies indicates that
these controls do not always work). The objective of the increased controls is to try to safeguard the less-sophisticated investor and to maintain the confidence of investors in general in the way financial markets are administered. Clearly, if the confidence of investors were undermined they would either cease to invest altogether or would demand significantly increased returns to compensate for their higher risk perceptions. The implications for companies needing to raise equity funding would be very severe in either case. An immediate practical implication of these tighter controls, designed to maintain a high level of investor confidence, is to increase the costs to the companies concerned. These higher costs relate to registration fees (including the costs of being listed on a stock exchange and of having share price information included in major newspapers and other information services): legal and professional costs of raising funding and of maintaining a stock exchange listing; shareholder communication costs (to both existing and prospective shareholders and to all shareholders whether large or small); and the costs of compliance with the rules of the various bodies of which the company becomes a member.

Many of these costs can be minimized if this second phase of equity funding is raised by private placement (without inviting the public to invest in the company) and if the company does not seek a stock exchange listing for its shares. Many private equity institutions have portfolios including pre-initial public offering (IPO) companies, which have raised private funding as a second stage of their development prior to flotation. However, these new investors must be prepared, with part of their funds at least, to buy out existing venture capital shareholders: this portion of their investment does not go to the company itself, but into the hands of existing shareholders. The remainder of the investment goes into the company and is used to finance the rapid growth of the business. Thus the major financial return to these new investors will take the form of capital gains on their shares, as in the case of the venture capitalists.

Unless these investors are going to stay in the company until it eventually does become mature, cash positive and dividend paying, they too will require other new investors to buy their shares in due course. This is a key problem caused by continuing to use private (i.e. non-public) sources of equity finance: it provides initial funding to the company but it does not create an easy exit route for those investors who wish to sell some shares and realize part of their capital gain.

The best way of achieving this exit is for the company to be quoted on a stock exchange so that prices for its shares are known. Equally importantly, financial traders (market makers) stand ready to buy and sell the shares at all times, thus providing a ready exit route for current shareholders. Flotations are discussed in more detail in Chapter 14. Much of the remainder of this chapter considers financial strategy issues from the perspective of companies already listed on a public stock exchange.

**CALCULATING THE COST OF EQUITY**

Prospective investors in a newly floated company will compare the return on this company as a potential investment against all their similar existing available opportunities. This means that they will need to assess their required return from
the new company. Two main methods are available to conduct this calculation. Of these, the Capital Asset Pricing Model (CAPM) is by far the most common, and is discussed below. The dividend growth model (DGM) is also used sometimes, and this is considered briefly later in the chapter. Fuller detail of these models is given in Appendix 1.

**CAPITAL ASSET PRICING MODEL**

\[ K_e = R_f + \beta(R_m - R_f) \]

where \( K_e \) is the shareholder’s required return, \( R_f \) is the risk-free rate, \( \beta \) is the sensitivity of the share price to market movements, and \( (R_m - R_f) \) is the market premium.

Using CAPM, the cost of equity is dictated by the beta factor of the company. The problem is that to calculate the beta, the volatility of the company’s return relative to the total market should be measured. It is difficult to do this for unquoted shares because comparable changes in share price are not readily available. This makes an assessment of the market sensitivity particularly fraught for unquoted high growth companies, where capital growth is a major component of the investors’ return. One way round the problem is to try to identify similar companies which are publicly quoted and to use some sort of suitably adjusted average of their beta factors.

However, several complexities remain even if such a compromise proves possible. Investors want compensation for the increased risk associated with the future volatility of returns from any company relative to the total market. Measuring actual volatilities, whether specific to the company or proxies using similar companies, gives historic information on betas, which is particularly problematical if the company is changing very rapidly and will continue to do so in the future. This is clearly likely to be the case with many high growth companies, with the result that any such historically based estimate of beta must be treated with extreme caution.

There are statistical techniques which assist in this assessment of risk. Any calculation of the beta from actual data is subject to an estimating range, which can itself be calculated. If it is assumed that the actual measurements are normally distributed about the mean (i.e. the individual measurements are randomly distributed rather than being skewed by some estimating bias or flaw in the method of calculation), it is possible to be 95% confident that the true beta lies within 1.96 standard deviations (in either direction) of the estimated value. (There are also statistical tests to indicate whether the measurements taken generate a statistically valid result and are normally distributed.) This gives a range for the expected value of the beta for any particular company which appears to be helpful, particularly since sophisticated beta calculations are available for the major shares in many stock markets from, for example, interested stockbrokers, investment banks, and some business schools. Unfortunately, the standard deviations for most high growth companies are very large, due to the commonly violent swings in returns experienced during the periods used in the calculations.
This high level of movement in return should not come as a surprise due to the high level of business risk during this period.

This high level of total business risk now includes an increasing component of market or systematic risk, because many high growth businesses are more affected by changes in external environmental factors than equivalent more mature, well-established companies. Obviously there is still a substantial element of unique risk associated with high growth businesses, relating to the development of the particular product and the marketing success of the company in building its share of the market. This unique risk can be taken into account by using cumulative probability factors to adjust the expected values of the future returns, as explained in Chapter 7, but the higher market-related risk may lead to an increase in the discount rate applied to these adjusted expected cash flows.

However, if the estimated beta for a particular high growth company, calculated as indicated above, is 1.5 but the standard deviation is 0.25, the confidence range for the beta factor is between one and two. As illustrated in Working insight 8.2 this can give an estimated cost of capital between 9% and 14% for the company, which is too broad a range to be of much use in assessing the attractiveness of the investment. Many investors appear to rank companies on their expected returns calculated using the arithmetic mean of the factor computations, but with such high ranges this is a somewhat dangerous practice.

WORKING INSIGHT 8.2

Risk-free debt has an expected return of 4%. The stock market premium is estimated to be 5% and the calculated beta factor for a particular high growth company is 1.5. The standard error for this company is calculated to be 0.25.

Using the CAPM on the base data gives:

\[
K_e = R_f + \beta(R_m - R_f) \\
= 4\% + (1.5 \times 5\%) \\
= 11.5\%
\]

However, the standard error means that the 95% confidence limit for the beta factor is given by:

95% confidence range = estimated value + 1.96 standard errors (say two)

\[
= 1.5 \pm 0.5 \\
= 1 \text{ to } 2
\]

Therefore the cost of capital for this company is between

\[
K_e = 4\% + (1 \times 5\%) = 9\%
\]

and

\[
K_e = 4\% + (2 \times 5\%) = 14\%
\]
DIVIDEND GROWTH MODEL

Using the DGM as a sanity-check of the share price

The company’s cost of equity, calculated using CAPM is 11.5%. Its share price is £1, and the dividend due to be paid next month is 3p.

Using the DGM:

\[
P = \frac{D_1}{(K_e - g)}
\]

where \( P \) is the share price, \( D_1 \) is the next dividend, \( K_e \) is the shareholder’s required return, and \( g \) is the future compound growth in dividends.

Another method of determining the cost of equity is to use the DGM. The principles behind the DGM calculation differ radically from the CAPM: the latter uses solely market-based data, whereas the DGM uses company-specific data.

Our own preference is to use CAPM to calculate the investors’ required return, despite all of its flaws. Being based on market information, CAPM is less susceptible to the idiosyncrasies of a particular company’s results. The DGM, being dependent on a growth rate, is particularly unreliable for companies which have very high growth rates, or very low ones. For a company in the launch or growth stages of its life cycle, this is an obvious drawback. The fact that a company has grown at, say 25% per year for the last three years does not (indeed, cannot) mean that it will continue to grow at that pace, and does not imply that its cost of equity must be in excess of that 25%.

Nevertheless, we do like to use the DGM as a sanity-check of the company’s share price. We do this by calculating the cost of equity using CAPM, and then feeding this back into the DGM model to see what underlying growth rates are implied. Working insight 8.3 gives an illustration of this.

REINVESTMENT PROJECTS

Growth companies tend to be developed with minimal or no dividend paid out, and reinvest post-tax profits to finance their high growth objectives. Such growth can come from taking on projects with a very similar risk profile to the existing business, or taking on projects with a different risk profile.
If growth is through new projects with a similar risk profile to the existing business, and if shareholder wealth is to be enhanced not destroyed, the return on reinvestment must be at least equal to the investors’ demanded return on equity.

However, many businesses expand in different directions, such that it is not true that all their projects face the same level of risks. A fundamental question is therefore whether all reinvestment projects should be expected to make a return greater than the company’s cost of capital.

It should be immediately clear that this would be illogical; if a project has a lower risk than the average risk of the company, it should be expected to make a lower return. As long as the expected return from the project is greater than its risk-adjusted cost of capital, the project is financially acceptable. If all projects are required to earn more than the company’s average cost of capital, the business runs the risk of rejecting many financially attractive, low-risk projects while accepting some unattractive higher risk projects. This is clearly illustrated in Figure 8.1.

Unfortunately, this concept is not applied by many leading companies. In many cases the company’s cost of capital (which should be related to its overall risk level) is taken as a minimum required rate of return for individual reinvestment projects, with extra return requirements being added for above average

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**Figure 8.1**

**Project risk and return**

Point A shows a lower than average-risk project which has an expected return above the project risk/return line but below the company cost of capital line. This project should be accepted. Point B shows a higher risk project with an expected return greater than the company’s cost of capital but below the risk-adjusted return required by the project risk/return line. This project should not be accepted.
risk projects. This leads to the position shown in Figure 8.2, where low-risk investment opportunities are rejected because their return is below the company’s cost of capital.

In some leading companies, the use of an average cost of capital as a hurdle is a deliberate strategy rather than being based on ignorance or misunderstanding of the financial theory. One financially very astute chairman of a very large UK-based group justified this strategy because ‘our investors would not understand why we should reinvest their money at lower rates of return than they demanded’. In other words this chairman did not believe that the risk profile of the group would be adjusted to reflect its new overall weighting, including the lower risk/lower return projects. (This might indeed be true but, as will be illustrated in examples later in the book, many senior managers may well understand the financial theory but often they don’t believe it applies to their particular company.)

Unfortunately this group also tried to reflect all of the project-associated risk through the discount rate, rather than using probability weighting factors to take account of the unique risk of each project. This latter method leaves only the market-related risk to be reflected in the discount factor applied to these adjusted cash flows. This part of the project risk can be much more logically compared to the company’s overall cost of capital, which will be linked to the company’s beta. The problem that this causes is that the project beta has to be estimated, which raises all the issues already discussed in respect of the company itself. However there is no way of avoiding assessing the risks associated with an investment project and this method at least forces the company to focus
separately on the unique risks of the project (which can be managed or diversified) and the impact of the project on the systematic risk of the company.

For most high growth companies, as we have already discussed, the dominant source of funding will be equity. Therefore the company’s cost of capital is the cost of equity. However when this reinvestment analysis is applied to more mature businesses, the impact of capital structure also needs to be taken into account. In general the company’s weighted average cost of capital is normally used but this is not appropriate if the funding for a particular project should differ from the average of the group, or where this project leads to a change in the group funding strategy. Thus, if a mature group with a relatively high debt-equity ratio is considering a reinvestment project in a new high growth or even start-up area of activity, the project should be regarded as being funded appropriately to its risk profile, that is, with equity funding rather than using a high proportion of debt.

**CASE STUDY 8.1**

**MARCONI PLC**

The GEC group was a UK-based defence and electronics company, which produced strong operating performance from a series of growing and mature businesses. The operating results meant that the business was strongly cash positive. Indeed, during the 1980s and early 1990s GEC was criticized by the markets for the excessive cash holdings the company maintained; well in excess of £2 billion. This cash mountain was not required to fund the company’s growth, and the City’s view was that it should be returned to shareholders.

In 1996 the management of the company changed, as did its strategy. Over the next few years a number of the company’s businesses were sold, including its defence interests. Acquisitions were made to reposition the company in the fast-growing telecoms sector, and GEC was re-named ‘Marconi’ in 1999 to reflect this.

The serial acquisitions were paid for out of the company’s cash pile, and in addition debt was taken on to meet their financing needs. By 2001 the company had net debt of about £3 billion.

Although initially investors approved the change in strategy from a cash-rich low-risk defence company to a highly geared telecoms business, changes in market conditions in the telecoms sector led to the collapse of the company’s markets, its share price and its credit rating. Ultimately, shareholders lost all of their money.

With hindsight, it is apparent that whilst it was wrong for the mature defence businesses to be financed using equity (as will be discussed in Chapter 9), it was also wrong for the high growth telecoms business – with its considerable business risk – to be funded mainly with debt. The Marconi story appears to be a case of total mismatch of business and financial strategies. However, whereas GEC’s over-reliance on equity ‘merely’ irritated its shareholders, Marconi’s over-gearing destroyed the value of their investment.

**RIGHTS ISSUES: CONCEPTS AND PRACTICE**

So far, there has been an implicit assumption that these high growth companies can finance their growth by their IPO proceeds, followed by a high retention ratio of existing profit levels. However, even a nil dividend payout policy may not always provide adequate funding to meet the desired growth rates of the business.
Consequently, there may be requirements for additional fund-raising exercises from time to time. These should again be in the form of equity because of the continuing high level of business risk. This new equity injection can be raised by an existing publicly quoted company through a direct offer to outside investors of new shares in the company to be issued at the current market price (known as a secondary public offering, SPO). An SPO should be made at the full current market price, as otherwise the existing shareholders are giving away a subsidy to these new investors. Once issued, the new shares are indistinguishable from the already issued existing shares and the new total value of the company is simply divided by the new total number of shares in order to arrive at a new price per share; any differential in issue price would therefore represent a wealth transfer from one shareholder to another.

It is not very practical to attempt to issue these new shares at a premium to the existing share price, because a rational new investor would prefer to buy existing shares directly in the market rather than more expensive new ones from the company. Equally it is normally difficult to make a substantial new issue of shares at the prevailing market price; if lots of potential investors wanted shares at this price, there should be substantial buying pressure in the market but, by definition, at the current market price supply and demand are balanced. A significant and sudden increase in the supply of any commodity normally leads to a decline in its price, even if only temporarily.

Thus it is often necessary to consider making the new issue at a discount to the current market price, but to do so would be to rob existing shareholders. This can be avoided if the existing shareholders are given rights to buy these discounted shares in proportion to their existing shareholdings; hence the name ‘rights issue’. These issues are normally described by reference to how many new shares can be bought for a number of existing shares owned; for example, a one for five rights issue means that for every five shares owned the shareholder gets the right (i.e. opportunity) to buy one of the new shares being offered. The company cannot force its existing shareholders to buy any more shares in the company; hence it is granting them an option to buy these new shares. As the new shares are being issued at a lower price than the current market price of the existing shares, this option should have a value and can be sold if the current shareholder does not want to take it up.

These points can be most clearly illustrated by a numerical example and one is given in Working insight 8.4. The rights issue is proposed at a small discount of 10% to the current share price (45p compared to 50p), which is quite normal for this type of growth company. It is important to understand what should, in theory, happen and what, in practice, normally does happen as a result of these types of rights issues.

1 Rights issues have clear advantages to existing shareholders, in that by giving them first refusal, new shares cannot be issued to dilute them. However, although pre-emption rights are common in the UK, they are not used in many other jurisdictions, including the US. An argument used there is that having pre-emption rights would slow down the finance-raising process, as approval of existing shareholders is required for a capital raising. In a market where rights issues are not common, this is possibly a valid argument, but custom and practice in the UK do show that shareholders are flexible, and issues can proceed quickly if need be.
On the announcement of a rights issue, the stock market receives two separate pieces of new information; it is told that the company wishes to raise new equity and it is also told what the company intends to do with that money. The stock market analyses this information and adjusts the share price accordingly, depending on whether it believes that the new issue will lead to substantially enhanced future cash flows, that is, will the investment have a positive net present value. In other words the information elements of the announcement are separately incorporated into the share price. If the proposed investment looks financially attractive the share price may rise to reflect this new opportunity; if the proposed source of funding, equity, is also considered sensible this may enhance the value still further.

However, initially the company has issued new shares in exchange for an explicit amount of cash. The share price will immediately move to reflect this new situation before then taking into account the longer-term impact of the investment of these funds. This immediate reaction is shown in Working insight 8.5.

What price for rights?

Satellite Television Audiovisual Recordings plc (STAR) wishes to increase its equity base to fund its exciting product development program and to finance its continuing high growth rate. It wants to raise over £100 million in new equity through a rights issue. Its existing issued share base of 1000 million 10p nominal value shares are currently trading at 50p, giving a market capitalization of £500 million. Current eps are 2.5p and dividends per share are 0.5p.

The company’s financial advisers have suggested a rights issue of one for four at 45p per share, which would raise £112.5 million, excluding issue costs.

Analysis

This company is currently positioned as a growth company because it has a P/E multiple of 20(50 p ÷ 2.5 p) and a dividend yield of only 1%(0.5p ÷ 50p), indicating that existing investors are buying the shares in the expectation of capital growth. This growth expectation seems reasonable as the company is at present retaining 80% of its profits for reinvestment; that is, 2.0p out of 2.5p.

On the announcement of a rights issue, the stock market receives two separate pieces of new information; it is told that the company wishes to raise new equity and it is also told what the company intends to do with that money. The stock market analyses this information and adjusts the share price accordingly, depending on whether it believes that the new issue will lead to substantially enhanced future cash flows, that is, will the investment have a positive net present value. In other words the information elements of the announcement are separately incorporated into the share price. If the proposed investment looks financially attractive the share price may rise to reflect this new opportunity; if the proposed source of funding, equity, is also considered sensible this may enhance the value still further.

However, initially the company has issued new shares in exchange for an explicit amount of cash. The share price will immediately move to reflect this new situation before then taking into account the longer-term impact of the investment of these funds. This immediate reaction is shown in Working insight 8.5.

It can be seen that the post-rights share price now reflects the weighted average of the original share price and the rights offer price, so that the discount in the rights offer has been spread over all the shares. Thus the share price has fallen slightly but this does not automatically make existing shareholders worse off. They have been given a right to buy a share at 45p, which will now be worth 49p when the right is taken up. If they do not wish to invest 45p more in the company, they can sell the right for 4p which recoups the 4p (4 × 1p) which they have lost on their existing shareholding. This impact is balanced no matter how large the original shareholding and irrespective of whether the rights are taken up or sold, as shown in Working insight 8.6.
It is by no means certain that the share price will move to 49p, but the final actual price will be affected by the stock market’s reaction to the new investment opportunity and by the company’s decision to use equity to fund it, as well as any other new information which affects the company or share prices in general. However, any such movement is not caused by the specific details of the rights issue, which produces no gain and no loss whether the rights are taken up or sold.

As it has been shown that the discount on a rights issue confers no advantage or disadvantage to existing shareholders, the terms of a rights issue should make no difference to its attractiveness to the existing shareholders. However, launching a narrow (i.e. small) discount rights issue introduces a risk for the company, in that it may not receive its desired new funding.

A rights issue has to be available for a specified period of time in order for shareholders to decide what to do and to send in their cheques or sell their rights in the market (the normal period is around three weeks). During this period, the rights exercise price is fixed but the share price will fluctuate, so that the gap between the two will change. In the case of a high growth share with a high beta, small movements in the total market can result in larger movements

<table>
<thead>
<tr>
<th>Number of shares (millions)</th>
<th>Price (p)</th>
<th>Market capitalization (£millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing position</td>
<td>1000 shares at 50p</td>
<td>⇒ 500.0</td>
</tr>
<tr>
<td>Rights issue (one for four)</td>
<td>250 shares at 45p</td>
<td>⇒ 112.5</td>
</tr>
<tr>
<td>Immediate position post-announcement</td>
<td>1250 shares ⇒ 49p</td>
<td>⇐ 612.5</td>
</tr>
</tbody>
</table>

The shareholder is given the right to buy shares at 45p.

The post-rights price of all shares (everything else being equal) should be 49p.

Therefore rights value per right (ignoring the time value of money impact caused by different settlement dates) is 4p.
Growth companies: Marketing focused

Impact of rights issues on substantial shareholders

STAR plc – alternatives for holder of 100 million shares (i.e. owner of 10% of company).

This shareholder receives rights to buy 25 million new shares at 45p and has two alternatives, either take up the rights or sell them.

**Take-up rights**

<table>
<thead>
<tr>
<th>Initial investment</th>
<th>100 million at 50p</th>
<th>£50.00 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay for rights</td>
<td>25 million at 45p</td>
<td>£11.25 million</td>
</tr>
<tr>
<td>Shareholder now owns but should have an investment worth</td>
<td>125 million shares</td>
<td>£61.25 million</td>
</tr>
</tbody>
</table>

If share price moves to 49p this is true because 125 million shares at 49p gives £61.25 million. Therefore there is no gain and no loss.

**Sell rights**

<table>
<thead>
<tr>
<th>Initial investment</th>
<th>100 million at 50p</th>
<th>£50 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receive from sale of rights</td>
<td>25 million at 4p</td>
<td>£1 million</td>
</tr>
<tr>
<td>Leaving a net investment of</td>
<td>100 million</td>
<td>Worth £49 million</td>
</tr>
</tbody>
</table>

This will be true if share price moves to 49p as it should. Therefore again, there is no gain and no loss.

In the particular share price. If the share price rises, the value of the rights offer increases and the rights become more attractive to investors. However, if the share price falls, the converse is true. Should the share price go below the rights offer price there is no reason for anyone to want to buy these new shares (i.e. take up the rights). In the example already given, it would be illogical for an investor to pay 45p to exercise their rights if the market price of STAR plc’s shares had fallen below this level. Equally there is no reason for any outsider to want to buy these rights in order to take them up.

Thus an unexpected fall in the share price could mean that the proposed rights issue would fail, with the result that the company would not receive its desired injection of new equity funding. This could leave the company unable to implement its now publicly stated strategy and so it needs to have an insurance policy. It can remove this risk of funding failure by underwriting the rights issue through an investment bank or similar institution. (This lead underwriter will normally lay off some of its risk by sub-underwriting smaller parts of the issue with other investment institutions, some of whom will probably already be shareholders in the company making the rights issue.)
An underwriting contract is a guarantee to take up, at the issue price, any of the new shares which are not bought by either existing shareholders or buyers of their rights in the market. Obviously this transfers the risk of any fall in the share price to the underwriters because it is only likely that they will have to buy the shares if the exercise price is below the market value of the shares at the end of the rights offer period. The company has to pay an underwriting premium in order to buy what is really a put option on the underwriters for all the shares, exercisable at the rights offer price. An important driver of option values (discussed in Appendix 2) is the option exercise price (i.e. the rights offer price) relative to the current asset value. Accordingly, the smaller the discount offered on the rights issue, the greater the value of the put option and hence the higher the insurance premium needs to be.

Arranging underwriting provides insurance to the company, but comes at a cost. As we have established that the discount on a rights issue should have no impact on shareholder wealth, this should be an incentive for companies to offer rights issues at much greater discounts; the larger discount would reduce the guarantee costs incurred. This incentive should be dramatically increased because all the analysis and comparisons of actual underwriting fees and their equivalent put option valuations shows that underwriting fees are excessively high; it is therefore a very inefficient market. However, many companies still persist in raising equity funding through narrow discount rights issues, presumably at least partly because ‘that is what successful companies do’. (Deep discount rights issues are discussed in Chapter 10.)

The discussion on the movements in rights values and share prices may have indicated a short-term investment strategy which could be of interest to a high-risk speculator. Suppose such a speculator had £196,000 to invest in STAR plc at the time of its rights issue, as is shown in Working insight 8.7; this investment could be made as 400,000 shares at the post-rights price of 49p, or instead the speculator could purchase 4,900,000 short-term rights to buy shares.

If the share price is volatile during the period before the rights are actually taken up, these movements will be reflected in the rights value because the exercise price (45p) of the rights offer is fixed. Thus the increased volume of rights which can be acquired multiplies up the impact of any particular movement in the share price; if this increased impact is the same whether prices go up or down, a similar effect could have been obtained by borrowing funds so as to buy 4.9 million shares (leveraging up the investment). However, the value of the rights cannot become negative, so the maximum loss is the 4p purchase price whereas the upside potential is not similarly constrained; thus the return is skewed as well as multiplied. The speculator has really acquired a low valued, short-dated call option on the shares with an exercise price of 45p.

These option markets in rights issues are actively traded during the offer periods, and arbitrageurs help to ensure the gap between the actual share price and the rights exercise price is always equal to the value of the rights. If this kind of option trading can be done, it may be possible for the underwriters of the rights issue to reduce their risk during the life of their insurance contract. The underwriting risk can, of course, be split into the normal two components, market risk and unique risk. The systematic risk element can be triggered if
the whole market collapses during the rights period, with the result that the company exercises its put option and leaves the underwriter sitting on a large capital loss. This risk can be hedged if part of the underwriting premium is used to buy a similarly structured put option, but on the whole market (e.g. the stock market index) rather than on the specific share. If the market does collapse, the gains on this put option will offset the loss on the underwriting contract.

(These examples of the underwriters wanting to hedge their market risk and the speculator wanting to multiply up their potential gain illustrate the critical strengths of option markets and option trading strategies. Players with completely opposite aims and objectives can all be attracted to use options in their different forms as part of their financing and investment strategies.)

There remains the risk that the overall market is stable or goes up, but the share price of the company collapses. It is much more difficult to hedge this risk specifically but it can partly be achieved if a suitably designed portfolio is used as the basis of the option hedge rather than the total market index. This can at least take account of key industry factors or major risk items which may affect the company’s share price more violently than the stock market. Of course, in a perfectly efficient market the costs involved in designing the perfect hedge would exactly equal the premium received for undertaking the underwriting contract. Fortunately, life is not that boring as the markets are not that perfectly efficient.

Using rights issues as a leveraged positively skewed speculative investment

STAR plc has offered a one for four rights issue at 45p compared to its original market price of 50p. (Post-rights weighted average share price should be 49p.)

The rights value should be 4p per share.

The speculator could invest £196,000 in 400,000 shares of STAR or in buying 4,900,000 rights to STAR shares to be issued at 45p (fixed offer price for rights).

If the share price rises by 10p during the rights offer period, the value of the rights should also rise 10p (ignoring the time value of money). However if the share price falls by 10p, the rights value cannot go below zero; hence the outcome is positively skewed. The higher volume investment in rights multiplies the change in return for the same change in share price in the same way as using borrowed funds increases volatility (i.e. leverages up the return).

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<th>Impact of ±10p in share price</th>
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<tr>
<td><strong>Equity investment</strong></td>
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<td><strong>Rights investment</strong></td>
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A rights issue can be regarded as a sale of the shares at full price, together with a bonus issue of free shares representing the discount in the rights price. This is mathematically illustrated in Working insight 8.8.

A bonus issue is an issue of shares made from the company’s retained profits. Effectively, the retained profits are capitalized, and moved in the balance sheet from the ‘reserves’ category to the ‘share capital’ category. Shareholders receive the relevant number of shares (based on their existing shareholdings) for free, leaving them with proportionately the same percentage of the company as they owned previously.

A transaction sometimes compared to a bonus issue is a share split. In a share split the nominal value of each share is proportionately reduced, so that the value of share capital on the balance sheet is unchanged, whereas in the bonus issue the nominal value of the shares remained the same as reserves were capitalized. Working insight 8.9 illustrates the different transactions.

As can be seen, in either case there is no cash flow impact to these balance sheet re-arrangements. Bonus issues and share splits should not affect share values because they do not change the expected future cash flows which will be generated by the business. If the number of issued shares is doubled by a bonus issue or split, the price per share should halve. However, this does not always seem to happen in practice. Furthermore, companies obviously believe that share splits have some value as they are very common, yet they actually cost the company money in advisers’ fees to implement.

There are several explanations suggested for any supposed increase in total market capitalization resulting from a bonus issue or share split:

1. Restriction of future dividends, thus strengthening the balance sheet.
2. A sign of management’s confidence in the future.
3. A signal of increased dividends.

Rights issues as a sale at full price plus a bonus issue of the discount element

STAR plc
Rights issue of 250 million shares at 45p generating £112.5 million in cash

This cash inflow could have been achieved by selling 225 million shares at 50p = £112.5 million

The remaining 25 million shares therefore represent a free bonus issue distribution to the existing shareholders.

This idea is not controversial because it is how companies actually account for rights issues. They adjust prior years’ figures to take account of this bonus element, as this would otherwise represent dilution in eps due to the increase in the number of issued shares.
A bonus issue and a share split

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<th>BonusCo</th>
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<td><strong>Capital structure prior to transaction</strong></td>
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<tr>
<td>Share capital</td>
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<tr>
<td>100,000 shares at £1 par value</td>
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<td>100,000</td>
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<tr>
<td>Retained profits</td>
<td>250,000</td>
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<td>350,000</td>
<td>350,000</td>
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<tr>
<td><strong>After a bonus issue of one for four shares</strong></td>
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<tr>
<td>Share capital</td>
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<tr>
<td>125,000 shares at £1 par value</td>
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<tr>
<td>Retained profits</td>
<td>225,000</td>
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<td></td>
<td>350,000</td>
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<tr>
<td><strong>After an 1.25 for one share split</strong></td>
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<tr>
<td>Share capital</td>
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<td>125,000 shares at 80p par value</td>
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<tr>
<td>Retained profits</td>
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The first suggested explanation is that the capitalization of reserves which occurs in a bonus issue (albeit not in a share split) removes the possibility that these reserves can be paid out as dividends and hence reduces the perception of financial risk on the part of lenders to the company. Any value from such a change should be observable through lower interest rates being charged to the company or by a move towards a higher proportion of debt financing; neither has been observed empirically after a bonus issue.

The most popular explanation is that such a move reflects a feeling of confidence on the part of the managers of the company. Therefore a bonus issue or share split may communicate useful information to investors regarding this improved level of confidence which can then get reflected in an increased share price. This can be expressed as, ‘successful companies make bonus issues’. (The converse can also be seen in that companies listed on the New York Stock Exchange lose their listing if their share price falls below $1: directors who fear that this might happen undertake share consolidations, which are the opposite of share splits, in order to prevent this happening.)

Another suggestion is that many companies maintain their dividend per share payments after a bonus issue or stock split. Logically, doubling the number of shares should halve the dividend per share. However, often the dividend is reduced by less than 50%. This means that the dividend payout ratio is increased unless earnings are expected suddenly to rise following the transaction. (The implication of this explanation is that shareholders prefer dividends...
to reinvestment by this company, but this is not logical for a high growth company which should be pursuing a high reinvestment strategy.)

Two further arguments are put forward as to why companies undertake share splits. The first relates to companies that encourage employees to hold shares in the business; if the share price rises to too high a level, this may make employee share ownership more difficult, or may discourage them from buying shares.

The final argument that appears particularly relevant to the UK stock market, where companies seem to worry if their share prices are too high in absolute terms, as this might make them less attractive. (Relatively few shares trade on the London Stock Exchange over £10 per share, while in the US companies trade at more than $100 per share with no detectable decrease in demand.) There is no theoretical logic to this argument because it is the proportionate share of the earnings stream which is important and doubling the physical number of issued shares doesn’t change the proportion of the company owned by any individual shareholder. However if the absolute share price is lower, it is supposed to attract more investors to buy shares in the company, thus forcing the price up and increasing the total market capitalization of the company. There is no empirical evidence to support an argument that lower valued shares show greater gains over time which might justify such an investor preference for lower priced shares, but this is a commonly held belief which is acted upon by many publicly quoted companies.

KEY MESSAGES

- Business risk remains high during a company’s growth stage, so its financial risk should be low. This means an equity funding strategy, and minimal dividend payments, if any.
- Equity at this stage will be from investors who require a lower return than the venture capitalists who funded the launch stage. This might be through an IPO on a stock exchange, or via a private placement to a group of investors.
- Further investment should be made only if it is expected to generate a return higher than the relevant cost of capital which, for a company with no gearing, is the same as the cost of equity. However, there are some practical difficulties in calculating the cost of equity, either by CAPM or the DGM.
- When further capital is issued, it is important to ensure that the interests of existing shareholders are not prejudiced. One way to do this is by the use of a rights issue, whereby new shares are offered first to the existing shareholders.
- Bonus issues and share splits change the number of shares in issue, but have no impact on the company’s cash flows.
KEY TERMS IN THIS CHAPTER

Bonus issue  
Capital asset pricing model (CAPM)  
Dividend growth model (DGM)  
Growth companies  
Initial public offering (IPO)  
Pre-emption rights  
Private placement  
Project-specific cost of capital  
Rights issue  
Secondary public offering (SPO)  
Share split  
Underwriting
Mature companies: To divi or not?

Overview: Summary of appropriate section of the overall model 165
Managing the transition to maturity 165
Adding value through financial strategy 168
Developing a dividend policy 169
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The end of the growth stage is often marked by some very aggressive price competition among rivals who have been left with considerable excess capacity as the anticipated continued sales growth in the industry fails to materialize. Once the industry has stabilized, the maturity stage of high but relatively stable sales at reasonable profit margins can begin. Clearly, the level of business risk has reduced again as another development phase has now been successfully completed; the company should enter the maturity stage with a good relative market share as a result of its investment in marketing during the growth stage. The critical business risks remaining relate to the duration of this stable, maturity stage and whether the company can maintain its strong market share, on a financially attractive basis, throughout this period.

The strategic emphasis now switches to one of maintaining share and improving efficiency, which can make the transition between growth and maturity quite difficult to manage. However, the reduction in business risk enables the financial risk to be increased through the introduction of debt financing. This is now quite practical because the net cash flow should have turned significantly positive, which enables the debt to be both serviced and repaid. The positive cash flow and ability to use debt funding for reinvestment needs are also important to shareholders as they allow the company to pay much higher dividends. Thus the dividend payout ratio is increased as a proportion of the new high current earnings per share (eps), increasing the absolute dividend payments significantly.

This increased dividend yield is required because the future growth prospects of the business are much lower than in the earlier stages of the life cycle. The lower growth prospects are reflected in a lower P/E ratio, thus shares are given a lower rating by the financial markets, but this does not necessarily lead to a decline in share prices. Earnings per share should be high and increasing slightly, due to efficiency gains, during this stage so that these high eps offset the reducing P/E multiples. The net result should be a much more stable share price, as more of the investors’ expected return is now provided through dividend yield rather than the capital gains which dominated the previous stages. These issues are illustrated in Working insight 9.1.

When the reducing business risk and correspondingly required reduction in total expectation of return are added into the equation, it becomes clear that managing this transition requires some clear communication between the company and its investor base.
This inevitability of product maturity should, when it arrives, lead to a significant change in managerial focus. The earlier emphasis on growth both in the overall market and in the share of that expanding market should give way to a much greater concentration on profitably maintaining the level of sales which has now been achieved. This means a change in managerial style is desirable because the previous critical success factors are no longer as relevant in a period of much more stable sales volumes. Many management teams find it quite possible to manage the transition from start-up to growth, but relatively few are as successful at moving from the growth stage to the maturity phase of the life cycle. It may therefore be beneficial if key changes are made at senior manager level at an appropriate point in this transition, as this may accelerate the required changes in managerial style.

The slowdown in sales growth relates to the product life cycle and this needs to be separated from the brand or the company, which often follow their own much longer life cycles. A strong brand may have been developed during the high growth phase of a particular product. If the positioning of the brand was particularly appropriate for the high growth rate being achieved by the product, it may be difficult and/or expensive to try to reposition the brand for the ensuing maturity stage which the product is now entering. It may be more attractive to transfer this brand to another product which is still in, or is just entering, its growth stage where strongly developed brand attributes may be more relevant. This idea of brand transfer is widely practised by several very large consumer goods companies which have a broad range of products which are at very different stages of their life cycles. It is critical that the new product to which the brand name and/or image is transferred has the appropriate characterization to match the brand attributes, but the result can clearly be to extend significantly the economic life of the brand. This can be important, as often the costs of developing a brand from scratch can be very large, so that the original investment decision needs as long a potential life as possible in order to justify the expenditure.

A good example where this tactic can work well is when the product really requires a change in its competitive positioning once it reaches the maturity stage.

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<th>Financial strategy parameters</th>
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<td><strong>Mature businesses</strong></td>
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<td>Financial risk</td>
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<td>Source of funding</td>
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<td>Dividend policy</td>
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<td>Future growth prospects</td>
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<td>Price/earnings multiple</td>
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<td>Current profitability, i.e. eps</td>
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<td>Share price</td>
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This can often be where the original competitive strategy was based on differentiation and a significant entry barrier was created by the use of appropriate strong branding. As the market matures, users of the product frequently become more knowledgeable and hence less willing to pay for certain types of differentiation benefit. Alternatively, the increasingly competitive environment (caused possibly by a period of excess capacity at the end of the growth stage) may have forced competitors to improve their quality or incorporate the branded product’s previously unique features into their own product, with the result that the brand attributes are no longer as strong as they were. It may be possible and economically sensible for the company to develop a new sustainable competitive advantage by emphasizing the value for money attributes of its product. This would normally require a price reduction as part of the product’s repositioning. A corresponding cost saving is needed, part of which may be achieved by no longer incorporating the original brand image into this repositioned product.

The company life cycle can itself be extended by having an appropriate portfolio of products within the business, so that the company can continue to grow even though any particular product has moved into its maturity stage. Some of the issues involved have already been discussed in earlier chapters.

Having mentioned the problems caused by failing to acknowledge a product’s move into the maturity stage it is also important to remember that it can be very expensive to assume that a product is mature when in reality it is still growing. A particularly long recession can depress the sales growth of many products to such an extent that companies tend to regard them as now mature, if not already declining. The ensuing upturn in the economy will restore the high growth prospects of many such products and, if the wrong strategy has been implemented, the company may find that it has lost substantial market share in what is now once again a rapidly growing market.

One potential way of avoiding such expensive miscalculations about the stage of development of a product is to consider its market in a progressively segmented manner rather than in total. Thus, for many products it is quite possible to find certain market segments which have definitely matured while other parts are showing all the hallmarks of accelerating growth rates. If these different segments are identified, appropriately tailored competitive strategies can be implemented to maximize the long-term value of the business.

This question of value maximization means that the changes required during this transition from high growth to maturity are not only internal to the company. In the initial stages of the life cycle shareholders expect most of their return to be generated from capital gains as the share price increases over time. These capital gains are produced by the company progressively overcoming many of the factors responsible for the initially very high business risks facing any start-up business. It is also possible that during the growth stage the company may outperform the market’s expectations, due either to the higher growth achieved by the product or to the greater market share gained by the particular company. However, once the maturity stage has been reached, these issues have largely been resolved so that the remaining business risks relate to the length of the maturity stage and the levels of profits and cash flows which can be generated during this relatively stable period. This means that the business risk associated
with a mature business is reduced to the medium range, which implies that investors should be prepared to accept a lower return than in the earlier higher risk phases of the life cycle.

Such a lower return will only be accepted if the required change in shareholders’ expectations is positively managed by the company.

**ADDING VALUE THROUGH FINANCIAL STRATEGY**

It is once again necessary to consider the components of the remaining business risk and then to relate these components to the level and type of return which should now be offered to the shareholders.

As a company matures, its level of unique risk normally reduces because the cash flows become much more predictable and stable. The proportionate impact of the systematic risk component of the company therefore becomes greater, but the beta factor which drives this level of risk also tends to normalize towards a beta of one, the beta of the markets as a whole. (Note that it may never actually become one, as the market represents an average of all companies, and some companies and industries are inherently more susceptible to market movements than others.) This normalization process is due to the lower growth of the product, which tends to reduce the impact of external environmental changes for companies which had relatively high betas during their growth stages. Conversely, companies with very low betas in the high growth phase (which are very rare) tend to become more responsive to changes affecting the overall market over time.

The demand for the product has now matured. This may have been caused because there are now more replacement products available to customers who were previously locked into the single product, or it may be that customers have eventually simply learned to control their consumption of the product so that demand is no longer increasing. This stable rate of consumption is more likely to be affected by general changes in the economy, as new users are no longer entering the market in large numbers and existing customers are not increasing their rate of usage.

If these factors can be applied to most mature companies, the base cost of equity capital for all such companies will be in a much smaller range than in the earlier stages of development. This smaller range will also be much closer to the expected return on the stock markets as a whole. Thus it is important that the company convinces its shareholders that it does now have a lower risk profile, so that they should accept this lower rate of return without reducing the share price to restore the actual rate of return to the previously higher levels. One obvious way to communicate this lower risk profile is for the company to prove it by delivering less volatile financial results from year to year.

Another major way is to start to change the way in which shareholders expect to receive their return. In the earlier stages, their financial return was achieved by capital gains in the value of their investments but this is less possible once the company has matured. Profits will be less volatile but they cannot be expected to continue to grow dramatically; what future growth can be achieved will come mainly as a result of improvements in efficiency rather than large real increases
in sales volumes or values. Indeed these improvements in profitability should become the emphasis of the reinvestments made by the business, whereas in the past most reinvestments would have gone on projects to do with growth in the market or in the share of the market. Now, marketing expenditure is concentrated on maintaining the existing market share, and, by reinvesting the current depreciation expense the company should be able to maintain its productive capacity.

This decline in the need to invest in rapid growth comes at a time of high profitability for the business, with the result that the company, for the first time, is a significant net cash producer. However, these high profits and lack of the earlier tax deferral opportunities (through high levels of capital investment for example) mean that the company is normally now a tax payer. This increases the expected present value of any potential tax shield which could be created by the use of debt financing. Also the assets involved in the business are normally now at their maximum tangible value, with strong stable cash flows being produced from the employment of these assets. This reduces the potential costs of any financial distress which might be created by the use of a level of debt financing which could not be serviced or repaid by the company. The positive cash flows being generated by the business on a relatively stable basis reduce the probability that these lower costs of financial distress would be incurred, because it is now much more likely that the company will be able to pay the interest on any borrowing obligations and to make the principal repayments as required.

Thus the inverse correlation between business risk and financial risk is borne out as the reducing business risk can be offset by increasing the financial risk through raising some debt funding. Such a change in the financial strategy from almost exclusively equity financing to incorporating an increasing proportion of debt funding can add considerable value to the shareholders of a maturing company.

The key is for the company to find a useful way of utilizing this newly acquired access to additional sources of funding, which can further increase the value of the company. The management team also has to adjust its style to managing for cash, given the increased riskiness of the financing structure.

Although gearing up the financial structure is a logical way to proceed in the financial life cycle, many management teams would prefer not to do so, as their job is made more comfortable by having a cushion of equity in a lower risk business. However, the nature of the financial markets is that a company with an inefficient capital structure often becomes a takeover target, particularly for private equity, as discussed in Chapter 17.

### DEVELOPING A DIVIDEND POLICY

The most beneficial application of this increasing cash availability is to start to make higher dividend payments to shareholders. An increasing dividend payout ratio serves several purposes including acting as a very good signalling device to shareholders that future growth prospects are not as exciting as in the past. This will reduce shareholder expectations regarding future growth, but future growth has been the dominant element of the total return to shareholders in the earlier
UNITED UTILITIES: GENERATING CASH FOR SHAREHOLDERS

In December 2007 United Utilities plc (UU) announced that it had completed the sale for £1.78 billion of its electricity distribution assets. This left it primarily as a UK water utility, although it retained a substantial long-term contract to run the electricity assets for the purchaser.

UK water utilities operate in a protected market, with retail customers required to buy from their local water company. Prices are capped by a regulator, on a formula based on cost of capital and re-set every five years. The companies operate in mature markets and have low business risk; their profit potential is due in part to an ability to create operating efficiencies.

The reason given for UU’s sale was to focus resources on its much bigger water business, where it sees more potential. The money released from the electricity assets, just over £1 billion net of debt, is to be returned to shareholders in a capital reconstruction of about £1.5 billion, partly funded by an increase in borrowings.

Utilities are generally highly geared, to reflect their mature markets and stable cash flows. Indeed, the cost of capital against which the regulator sets prices is weighted towards debt financing. The transaction will increase UU’s gearing (as a result of which its credit rating is being reduced a notch from A− to BBB+). However, dividends will be reduced by 30% after the return of capital, reflecting the company’s new situation. This dividend is then planned to rise at 2% above inflation. In cash terms, investors are expected to be better off overall.

Source: www.unitedutilities.com and Financial Times

stages of development. This element is now being replaced by an increasing element of dividend yield, which is supported by an increasing dividend payout ratio out of the high stable post-tax profits. Thus the company now has the ability to support a consistent high level of dividends and the cash required to pay these dividends is also readily available from within the company. The reinvestment needs of the business can be met from the lower retention ratio on existing profits supplemented by raising a reasonable proportion of debt funding.

The P/E multiple will reduce as the market reassesses the potential for future growth. However the increasing level of earnings and dividends should maintain the share price at the high levels achieved at the end of the growth stage, as long as the transition is properly managed. If substantial future growth expectations are allowed to be believed by shareholders for too long, the share price may rise too high in the vain hope of this continued growth which cannot be delivered. In almost all such cases the essential reaction of the stock markets when they realize their error is to overreact in the opposite direction, so the share price can often fall significantly when it becomes clear that the expected growth is not going to be delivered. It is by no means uncommon for a company to become a takeover target during such a period of short-term rapid share price collapse caused by badly managing the expectations of the market.

Theoretically there is no difference to the shareholder between the company paying dividends and reinvesting the profits. If the company is reinvesting in
positive net present value projects, the share price should increase to reflect the expected increased level of future cash flow which should result from the reinvestment. However, this argument is based on an assumption that a company can always reinvest its profits at a rate of return which is at least equal to the shareholders’ expected return on their investment. During the early stages of the product life cycle, the opportunities for financially attractive reinvestment of current profit levels are plentiful. This is due both to the high rate of growth with its resulting need for investment and to the relatively low levels of profits available for reinvestment. With the arrival of the maturity stage the need for reinvestment reduces significantly just as the availability of finance increases substantially.

This means that the company runs a potential risk of retaining profits for which it has no profitable use, which can lead to a declining overall rate of return for the business. Alternatively, the company can start to invest these funds in other areas in the hope of developing new growth opportunities and new sustainable competitive advantages with which to exploit these growth opportunities. These diversification strategies have already been discussed; at this point it is sufficient to say that they normally destroy shareholder value.

The way in which dividend policy can enhance shareholder value can best be illustrated by some simplified numerical examples. In Working insight 9.2 the financial details for STAR plc are given, which indicate that it is currently positioned as a growth company with a relatively low dividend payout ratio. It is intended to use Gordon’s dividend growth formula (despite its simplifying assumptions, the results in these examples are not misleading and the arithmetic is kept relatively straightforward) to analyse the likely impact on shareholder wealth of possible changes in this dividend policy.

In this example, shareholders expect growth to be maintained at 15% per annum but this expectation is in the knowledge of the current dividend policy of the company. Thus, as shown in Working insight 9.3, the shareholders are basing their growth expectation on the company achieving a return on reinvestment of 18.75% per annum in the future. It should be remembered that, in the absence of any additional information, this expected return on reinvestment may be based on the return on equity being achieved by the company.

An important question is whether this rate of retention is adding to shareholder value, or reducing it. In STAR’s case, the expected return on reinvestment (18.75%) is greater than the total return demanded by the shareholder with the current strategy (15.8%). It appears to be logical for the company to retain this level of its current profit provided that the directors believe it can achieve 18.75% return on reinvestment.

However, it may be possible to improve this position by changing the dividend payout ratio. This can most easily be illustrated by considering the position if a nil payout ratio or a 100% payout ratio were adopted. (These extremes are used because they each make one element in the formula equal to zero; they are therefore used for arithmetic clarity rather than to advocate that companies should adopt one or other extreme position.)

If the company were to switch to a nil payout policy, a rational investor would expect the future rate of growth to increase in order to compensate for forgoing the immediate dividend income. Theoretically the company should be able to reinvest the additional retained profit at the same rate of return but, in
STAR plc: a growth company

Today’s share price of 125p for Solar Technology And Resources plc (STAR) is supported by an expected 1p dividend to be paid out of expected eps of 5.0p. It is known that shareholders expect future growth to be maintained at 15% per annum, and that the steady state cost of equity for an equivalent company to STAR is 10% per annum. The present dividend policy represents a 20% payout policy.

Using Gordon’s dividend growth model:

\[ K_e = \frac{D_t}{P_0} + g \]
\[ = \frac{1}{125} + 15\% \]
\[ = 0.8\% + 15\% \]
\[ = 15.8\% \]

Only 0.8% of shareholders’ requirement for a 15.8% return is met by the dividend yield; therefore 15% must represent required capital growth.

We can demonstrate in two ways that STAR is seen by the markets as a growth company.

(a) Present Value of Growth Opportunities

At steady state, STAR’s P/E ratio would be 1/0.1

\[ = 10 \text{ times} \]

Share price at steady state is 10 × 5p

\[ = 50p \]

Current share price is 125p

Therefore, 75p of the current share price represents PVGO – 60% of the price.

(b) Steady State P/E

Current P/E is 125/5 = 25 times
Steady state P/E is 10 times
Therefore current P/E is considerably greater than steady state P/E, demonstrating the market’s growth expectations.

WORKING INSIGHT 9.2
Relationship of growth and return on reinvestment

The rate of internally funded sustainable organic growth is determined by the retention ratio and the return which is achieved on these reinvested funds; so that:

\[ g = \text{retention ratio} \times \text{return on reinvestment} \]
\[ = (1 - \text{payout ratio}) \times \text{return on reinvestment (ROR)} \]

For STAR this gives:

\[ 15\% = (1 - 0.2) \text{ROR} \]

Therefore ROR = (15%/0.8) = 18.75%
the real world, companies do not have an infinite supply of equally attractive investment projects.

Most capital investment budgeting processes select the most attractive projects first and so it is normal to find a law of diminishing returns applying when a company is given an increase in its capital expenditure levels. This may cause a minor reduction in the average rate of return on the reinvestment but it is occasionally found that an increase in available expenditure actually results in an increase in the average rate of return because it enables the company to undertake a particularly attractive project which had previously been rejected due to lack of available funding. (It is again important to remember that in theory such a situation cannot occur because the company should raise new funding in order to undertake all projects which generate an expected return in excess of the company’s cost of capital.)

For simplicity an assumption has been made in these examples that the return on reinvestment is unchanged with the movements in dividend policy.

As can be seen in Working insight 9.4, the 100% retention ratio leads to a greater increase in the expected growth rate than the reduction caused by the non-payment of immediate dividends. This means that the total return is increased, unless the share price rises to keep the expected return at its previous level of 15.8%.

Changes in required rates of return are caused by changes in perceptions of risk; does changing the dividend payout ratio affect shareholders’ risk perceptions? The theory may at first appear to indicate that this should not be so because if shareholders are indifferent between dividends and capital growth they should not demand different levels of return if the mix provided by any

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<table>
<thead>
<tr>
<th>STAR plc: 100% retention ratio</th>
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</thead>
<tbody>
<tr>
<td>[ g = \text{retention ratio} \times \text{return on reinvestment} ]</td>
</tr>
<tr>
<td>If no dividends are paid, the retention ratio is 100%</td>
</tr>
<tr>
<td>[ g = 100% \times \text{ROR} ]</td>
</tr>
<tr>
<td>[ = 100% \times 18.75% ]</td>
</tr>
<tr>
<td>[ = 18.75% ]</td>
</tr>
<tr>
<td>Therefore, using Gordon’s dividend growth model:</td>
</tr>
<tr>
<td>[ K_e = 0 + 18.75% ]</td>
</tr>
<tr>
<td>[ = 18.75% ]</td>
</tr>
<tr>
<td>This represents an increase in expected return by shareholders, which was 15.8%. This would only be logical if they were to perceive an increased risk due to this change in financial strategy. Otherwise, the share price should increase to reduce the return to the normal level of expected returns. With a 100% retention ratio this cannot be reflected in this simplified formula.</td>
</tr>
</tbody>
</table>
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company changes. However a high retention rate is only logical for a growth-orientated company and the risk profile of such companies is higher than for similar but more mature businesses. Hence it could be argued that an increase in the retention rate should indicate higher future growth expectations and the greater volatility associated with higher growth may increase the risk perception of investors.

Looked at another way, the shareholders may be more worried about a company which keeps the vast majority of its current profits when compared with one which pays a much higher proportion of these profits out as current dividends. With a high retention policy shareholders are not only backing the continued success of the current business strategy but are also trusting that the company’s managers can identify and successfully implement financially attractive new investment projects. Clearly this is less worrying (i.e. risky) if the new investments are closely related to the existing successful areas of operation of the company.

In Chapter 13 we discuss again the issues surrounding companies’ dividend policies, and the use of share buybacks to supplement those dividend policies: buybacks can be used by maturing companies to re-gear themselves, taking on a capital structure that more appropriately reflects their new stage in the life cycle. There, we will also discuss the apparent preference of investors for dividends rather than capital growth. This is sometimes known as the ‘bird in hand’ theory, after the English folk saying ‘A bird in the hand is worth two in the bush’.

The other extreme dividend policy for STAR is to pay out all of its current profits as dividends. As shown in Working insight 9.5, this means that no future growth should be expected. Therefore all the return to shareholders comes through dividend yield, and dividends are likely to stay at their current level. This potentially places the company in a steady state position, as discussed in Chapter 2, and the expected steady state return for shareholders in STAR was already given in Working insight 9.2 as being 10%. If this is the new rate of return expected by shareholders (reflecting their reduced perception of risk due to the higher dividend payout policy as discussed above) this can only be achieved by a fall in the share price to 50p.

Such a dramatic potential fall should not be surprising for a high growth company because, as noted in Working insight 9.2, 60% of the current share price represents the present value of the future growth opportunities. If the company were to change its dividend policy to a 100% payout ratio, these future growth opportunities would disappear, as would their present value component of the current share price. Thus this reduced potential share price of 50p for STAR represents the present value of the current earnings stream, without taking into account the future growth opportunities. In practice the stock market makes this adjustment to the share prices of high growth companies which, for whatever reason, are now not expected to produce the previously anticipated growth, irrespective of whether the company acknowledges the change by increasing its dividend payout ratio.

This illustration of the impact of changes in dividend policy for a high growth company can be contrasted with the impacts on a declining business, as shown in Working insight 9.6. The expected return on equity for DOG Inc is now dominated by the dividend yield component, which is not surprising considering the
Impact of a 100% dividend payout policy in a growth company

If all current profits are paid out as dividends, the future growth expectation must be zero, i.e.:

\[ g = \text{retention ratio} \times \text{return on reinvestment} \]
\[ = (1 - \text{payout ratio}) \times \text{return on reinvestment (ROR)} \]
\[ = (1 - 1) \times \text{ROR} \]
\[ = 0 \]

For STAR plc the maximum sustainable dividend payment is 5.0 p (i.e. the current eps). If the share price stays at 125 p, the shareholder’s return is reduced to:

\[ K_e = \frac{5}{125} + 0 = 4\% \]

but shareholders previously wanted a return of 15.8%. The company can now be regarded as having moved to a steady state position (100% payout policy) and, as per Working insight 9.2, investors should now expect a 10% return. This can only be achieved by a reduction in share price, thus:

\[ 10\% = \frac{5}{P_1} + 0 \]

Therefore,

\[ P_1 = \frac{5}{0.1} = 50 \text{ p (a reduction of 75 p, or 60\%)} \]

where \( P_1 \) is the share price after announcing the change in dividend policy.

DOG Inc: a declining business

Dear Old Geriatrics Inc has a share price of 100 p. The company is expected to pay a dividend of 9 p per share out of eps of 12 p. Shareholders only expect annual growth of 2%.

Using Gordon’s dividend growth model gives:

\[ K_e = \frac{D_1}{P_0} + g \]
\[ = \frac{9}{100} \text{ p} + 2\% \]
\[ = 11\% \]

But

\[ g = \text{retention ratio} \times \text{return on reinvestment (ROR)} \]
\[ 2\% = 0.25 \times \text{ROR} \]

or

\[ \text{return on reinvestment} = \frac{2\%}{0.25} = 8\% \]
Switch to a 100% payout ratio in a declining business

If all current profits are paid out, $g = 0$ under Gordon’s model. Thus, if the share price is unchanged:

$$K_e = \frac{D_1}{P_0} + 0$$

$$= 12 \, p / 100 \, p + 0$$

$$= 12\%$$

However, shareholders only required a 11% rate of return when 25% of profits were being reinvested. If their risk perception has been reduced due to the higher payout ratio, the required rate of return should also reduce rather than increase. If we were to assume that the expected return stays the same, this would give …

$$P_1 = \frac{D_1}{K_e} = 12 / 0.11 = 109 \, p$$

where $P_1$ is the share price after announcing the change in dividend policy.

(The logic of maintaining the previous cost of equity capital is that DOG Inc. has been categorized as a declining business, and therefore dividends will not be expected to be maintained at this same level forever; growth will actually be negative in the future!)

75% payout ratio. However the shareholders are assuming, in their expected growth rate of 2% per annum, that the company’s return on reinvestment is only 8% per annum. This is considerably below their required rate of return of 11%, thus giving the impression that the company is destroying shareholder value by retaining even 25% of current profits. If this is so the share price should rise in response to a further increase in the dividend payout ratio. The potential impact of a move to a 100% payout ratio is shown in Working insight 9.7, which indicates a likely rise in share price as the destruction of shareholder value is reversed.

It would be logical to expect that an increase in the retention ratio of this company would lead to a significant decline in share price, and the effect of increasing the retention ratio to 50% is shown in Working insight 9.8. The low return on reinvestment means that the growth component is still very low, so that the dividend yield has to be high to compensate. This will only be achieved if the share price falls, as this automatically increases the dividend yield for any given dividend payment. The required reduction in share price signals the greater level of shareholder wealth which is being destroyed by the application of such an inappropriate financial strategy.

These illustrations indicate the importance of the dividend policy during the maturity stage, which is the bridge between high growth and decline for the business. The company should leave the growth stage with a low dividend payout ratio but should enter the decline stage with a 100% payout ratio, or very nearly that level. The rate of transition is governed by the financially attractive reinvestment opportunities available to the company.
Mature companies: To divi or not?

Whilst discussing companies in the mature stage of the life cycle, it is appropriate to mention project finance – for example, the financing of infrastructure projects such as roads or bridges. Technically, these are start-up projects, in that an asset and stream of income are being created which did not exist before. Therefore, if the life cycle model were being followed blindly, with no regard to the principles behind it, one should expect equity financing. In fact, most project finance is done, quite properly, through debt instruments.

Case study 9.2 gives an example of such a project, to show how the risk profile differs from a normal business opportunity. Working insight 9.9 sets out generically the key characteristics of project finance that set it apart from normal start-ups and make debt finance appropriate.

In the UK, the government has used the Private Finance Initiative to contract out to private sector businesses the building and running of public services such as hospitals, schools, etc. Such investment opportunities have many of the characteristics of project finance: there is an element of risk during the construction phase, but then the risk diminishes and a utility-type return should be available. Operators who understand this have increased their returns from these projects by charging the government a high rate for finance, reflecting the initial riskiness of the project, but then refinancing it themselves with much cheaper debt once the asset is up and running.

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**WORKING INSIGHT 9.8**

**Increasing the retention ratio in a declining business**

The expected return on reinvestment is assumed to be maintained at 8%. If the retention ratio is increased to 50%, the expected dividend payment reduces to 6p. If we assume that shareholders’ required return remains at 11%, this gives:

\[ K_e = \frac{D_1}{P_1} + \text{growth} \]
\[ = \frac{D_1}{P_1} + (\text{retention ratio} \times \text{return on reinvestment}) \]

i.e.

\[ 11\% = \frac{6}{P_1} + (0.5 \times 8\%) \]
\[ = \frac{6}{P_1} + 4\% \]

where \( P_1 \) is the share price after the announcement of the change in dividend policy:

\[ P_1 = 6/7\% \]
\[ = 85.7\text{p} \]

This represents a decline in the share price of about 14% due to retaining profits in a declining business.
A financing with which one of your authors was involved was building a wind farm on an empty site in Wales. A licence had been obtained under the UK government’s Non Fossil Fuel Obligation, whereby the government was trying to reduce dependence on carbon-based fuels. The licence gave the right, for a period of over 20 years, to sell into the National Grid all electricity generated by the wind farm at a price well in excess of the normal price for electricity, index-linked to inflation. So, the project involved raising the money, building the wind farm, and operating it for the full period of the licence.

Although logistically this was a complex task to coordinate and manage, in financing terms it was quite low risk. The manufacturer of the turbines was under contract to complete the build on time, or to pay liquidated damages, so the construction risk was mitigated. The manufacturer had also guaranteed a certain level of efficiency of the turbines, which meant that the likely level of electricity generation was known. The government had agreed to buy all that was produced, and the price was known, so there was little sales risk. And the contracts to maintain the turbines had been agreed several years in advance, so that too was a known cost. The project had been put together in such a way that the only risk that was being taken was whether or not the wind would blow in Wales!

The cash flow profile of the project was that it would be heavily cash negative in the first year, during the construction phase, and then would be cash generative thereafter. Thus, only a small amount of the finance was in the form of equity. Most of the money was put in as debt of varying types, so that the debt could be repaid once the wind farm was up and running. A distribution policy was devised, included in the legal agreement between all of the parties, that provided for the majority of the cash flow to be paid out, with minimal retention as there was no prospect of growth in this business.
KEY MESSAGES

- As companies approach maturity the level of business risk reduces and so it is appropriate to take on more financial risk: debt should increase. Also, with fewer growth opportunities, the dividend payout should also increase.
- Investors’ return in this stage comes more from dividends and less from expected capital growth.
- The nature of project finance means that start-up infrastructure projects are often, correctly, financed as mature businesses once the initial construction phase is complete.

KEY TERMS IN THIS CHAPTER

Decline  Private finance initiative
Dividend  Project finance
Mature
Overview: Applying the overall model 181
The final financial strategy 182
Alternative business strategies to delay or avoid death 184
Deep discount rights issues 185
Adding value by reducing debt ratios 189
Key messages 190
Key terms in this chapter 190
Unfortunately, the strong positive cash generation of the maturity stage cannot continue for ever (at least not unless immensely inefficient markets have been created and are maintained to infinity), as the demand for the product will eventually start to die away. As demand fades the cash inflows decline as well. Although during the maturity stage funds were not invested in developing the market or in increasing market share, expenditure was being made to maintain both these factors affecting future sales levels. Once sales demand starts to decline irrevocably, it is no longer sensible to continue spending the same amount on this maintenance type of marketing activity. Thus net cash inflows can be maintained during the early stages of decline by modifying the business strategy appropriately.

Despite this move to decline and the inevitable ultimate death of the product, the associated business risk should be regarded as still reducing from its level in the previous maturity stage. Yet another of the original unknowns, that is, the length of the maturity stage, has now been resolved and the only major remaining risk is for how long will it make economic sense to allow the business to continue.

This low business risk should be complemented by a relatively high financial risk source of funding. This can be achieved by a combination of a high dividend payout policy and the utilization of debt financing. The reinvestment strategy in a dying business is likely to be low, because the future growth prospects are now negative, and this links very easily to the high dividend payout policy. Indeed dividends paid during this stage can exceed post-tax profits due to the possibility of there being an inadequate financial justification to reinvest depreciation. (Reinvesting depreciation is a normal way of maintaining the scale of the existing business but this may not be logical during the decline stage.) Consequently dividends may equal the total of profits and depreciation, in which case it should be clear that part of the dividend payment really represents a repayment of capital.

This indicates how debt financing can be introduced into a declining business. Although assets may not be replaced as they are fully used up, some funds are inevitably tied up in the business during this period. If these funds are provided by equity investors, they will require a risk-adjusted return on this investment. However, the cost of debt is lower than the cost of equity so that a refinancing operation may enable some of these equity funds to be released by the company prior to its eventual liquidation. Lenders to the company will not want to take on an equity risk for a debt-based return, but they should be willing to lend against the ultimate realizable value of the assets which are locking up shareholders’ equity. These borrowings can be paid to shareholders by way of dividend or share repurchase, and again clearly represent a repayment of capital.

The negative growth prospects are translated into a low price/earnings multiple for the shares and, when allied with the declining trend in earnings per share (eps) which is experienced during this stage; this now results in a declining share price. However, as long as the shareholders are aware that part of their high dividend payments are effectively repayments of capital, this declining value should not cause undue concern. These issues are illustrated in Working insight 10.1.
The decline stage of the life cycle should not be regarded as a depressing end to the continuous process of development of business and financial strategies which has gone before. It is important that the financial strategy is reviewed and the appropriate changes are made as the company moves from maturity through to decline. A good example of this analytical review is with regard to the cost structure of the business.

In the launch stage the very high business risk indicated that, as far as possible, costs should be kept variable and long-term financial commitments should be avoided. The high investment requirements of the growth stage usually lead to an increase in the fixed cost base, but the high business risk still means that the proportion of fixed costs should be carefully monitored. It is only when the greater stability of the maturity stage is reached that the business can accept the increased risk associated with a high level of fixed cost. The resulting efficiency gains are important to the continued improvement in operating performance.

When sales volumes start to decline, such a high level of fixed costs would quickly move the company into a severe loss-making position. Therefore it is important that the proportion of fixed costs is reduced, for example, by renewing contracts on a short-term or completely variable basis. This represents a reversal of the trend through the earlier stages of the life cycle, and is advocated in spite of the continuing reduction in the business risk profile. It is however completely in accordance with the need to use a much shorter term timescale for financially evaluating all decisions during this stage.

The major risk associated with a declining business is that sudden relatively small changes in the external business environment can make the business uneconomic, so that immediate closure is forced. If major costs are still of a fixed nature or if new expenditures have been justified over a long future period of continued benefits, the financial impact of such a sudden forced closure can be extremely adverse. The company can effectively hedge itself from some of these adverse consequences by focusing on short-term financial impacts, such as is achieved by using financial payback as a means of justifying expenditures rather than the more sophisticated discounted cash flow techniques.

<table>
<thead>
<tr>
<th>Financial strategy parameters</th>
<th>Declining businesses</th>
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<td>Business risk</td>
<td>Low</td>
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<tr>
<td>Financial risk</td>
<td>High</td>
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<td>Source of funding</td>
<td>Debt</td>
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<td>Dividend policy</td>
<td>Total payout ratio</td>
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<td>Future growth prospects</td>
<td>Negative</td>
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<tr>
<td>Price/earnings multiple</td>
<td>Low</td>
</tr>
<tr>
<td>Current profitability, that is, eps</td>
<td>Low and declining</td>
</tr>
<tr>
<td>Share price</td>
<td>Declining and increasing in volatility</td>
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</tbody>
</table>
A similar logic can be used in assessing the economic performance of the business during the decline stage. Return on investment is the most common accounting technique used by companies for assessing business performance. This compares some measure of periodic profit with the investment required to achieve that profit. Depreciation is normally charged as an expense in calculating the profit; this assumes that the business intends to maintain its asset base by reinvesting the depreciation expense. Once the company moves into decline this may not be a valid assumption. Furthermore, the reducing scale of activity may enable the company to reduce the funds tied up in working capital. This means that the available cash generated from the business may exceed the operating cash flows.

If this increased cash balance is not required by the business, it should be paid out to shareholders: as illustrated in Chapter 9, the potential return on reinvestment in a declining business is often below the shareholders’ required rate of return. This creates a high dividend payout ratio which will often exceed 100%, highlighting that part of these dividends are really repayments of capital. As a result, shareholders should not be unduly concerned with a declining share price – as long as they are being compensated with a sufficiently high dividend yield.

This part of the financial strategy is not in conflict with the theory because it is dictated by the declining opportunities for financially attractive reinvestments in the business. However, the reducing business risk has led to the overall financial strategy model of Chapter 4 advocating that the debt funding ratio should be increased during this stage. Theoretically, of course, the debt:equity ratio has no impact on the value of equity but it is generally agreed that there is a positive impact of a tax shield caused by using some debt funding, as well as a negative aspect associated with the costs and likelihood of financial distress.

This argument regarding the overall impact of using debt in any other business depends on the net balance of these offsetting influences. Thus in a mature business, it is possible to add value through borrowings because the positive impact of the tax shield normally outweighs the much smaller adverse consequences of potential financial distress. However, the declining business may be thought less likely to pay corporation taxes due to its reducing profit streams, so that the value of the tax shield may be reduced.

(This may be true for normal operating profits but, in most major economies, corporation taxes are affected by many fiscal factors other than pure accounting profits. For instance, many governments allow companies to claim accelerated depreciation allowances for tax purposes, which create differences between taxable profits and accounting profits. Other regimes have given allowances for additional capital invested in inventories. These fiscal adjustments are normally given as incentives for companies to invest, so they are geared to reduce tax liabilities while the company is growing. It is an inevitable consequence, rather than a devious tax strategy, that these adjustments therefore tend to increase tax payments when a company is running down its investment base. Thus declining companies often face a higher effective rate of tax on their profits which can actually increase the value of a tax shield created by raising some debt financing.)

However, declining companies do not need to raise much funding for reinvestment since it has just been established that they are reducing the net value
of their asset base. This debt-carrying capacity can therefore be used to produce cash which is paid out to shareholders sooner rather than later. This is achieved by borrowing against the terminal realizable value of the assets locked into the company. If this capital were not realized now, the shareholders would receive a final capital distribution when the company was eventually wound up. By borrowing against these assets now, it should be possible to increase the present value of the related distribution which can be paid to shareholders using the logic that the cost of debt is always lower than the cost of equity, particularly if the benefit of a tax shield further reduces the cost of debt. This is mathematically illustrated in Working insight 10.2.

The debt funding for a declining business is therefore focused on realizable values of assets and this dramatically reduces the costs associated with future financial distress. Indeed the structuring of the borrowings will be designed to make it easy for lenders to take possession of and realize the value of their security, when the business no longer has an economically viable use for these assets. Consequently the use of a high level of debt funding in a declining business is not really contradictory to the theory, as long as the theory is sensibly applied.

ALTERNATIVE BUSINESS STRATEGIES TO DELAY OR AVOID DEATH

If the appropriate financial strategy is adopted by the company, the decline stage of the life cycle and the ultimate liquidation of the company are not necessarily injurious to shareholder wealth. However, these events are not normally looked at as neutral or non-threatening by the managers involved in the company. The final phase of the life cycle represents one of the most severe challenges to the concept of agency theory, because it may appear essential to many managers that ways must be found to avoid the final act of winding
up the company, even though continuing may not be in the best interests of shareholders.

There are many alternative strategies which are employed by businesses to try to delay or avoid their inevitable deaths, only some of which can be beneficial to the shareholders. One obvious strategy is to diversify into other areas but, if the diversification is left until the core business has moved into its decline stage, it will be very difficult for the company to finance the diversification from a declining cash flow. The lack of shareholder wealth creation from diversification has already been considered.

A potentially more attractive strategy is to examine the main reasons why the company is now in decline. Referring back to the basic Boston matrix, it is clear that a major difference between a cash cow and a dog is the lower market share held by the dog company. This may indicate a possible way of adding value to the business, particularly if it is expected that the decline stage may itself last a long while. If there are a large number of small companies in this market, they all face a slow, lingering, painful unproductive death. However, one of the companies may decide to change the dynamics of the industry by acquiring several of its small competitors. The cost of these acquisitions should not be too great as the companies will be making poor current financial returns and be expecting things to get worse in the future. It is possible that a very small premium over the realizable asset value of each business may secure its purchase.

Once the company has achieved a much more dominant market share, it may be able to improve its overall financial return quite significantly. This could be done simply by rationalizing the total capacity of their group so as to remove capacity from the industry, if this is depressing selling prices. Alternatively the greater market share can be used to change the dynamics of the relative bargaining power with both customers and suppliers; thus increasing the share of the value chain gained by this company. In many cases, the end result is that the company discovers that the industry was not really in decline at all; the companies in the industry were in decline due to the disastrous industry dynamics which had been allowed to develop. Thus, as shown in Figure 10.1, the many small businesses are turned back into the single large cash cow.

If this type of rationalization strategy is successful, it can be argued as demonstrating the synergy benefits of acquisitions which are discussed later in the book.

DEEP DISCOUNT RIGHTS ISSUES

Any attempt to rationalize a very mature or declining industry by a series of acquisitions requires finance to be raised. A logical alternative would be to raise at least some debt, since debt financing is attractive at this latter end of the life cycle. However, some equity funding may be considered appropriate and this could be raised via a rights issue to the existing shareholders. (It is most unlikely that the shareholders of the other companies in the industry would find anything other than a full cash offer for their existing shares to be at all attractive; they want to get out of the industry sooner rather than later.) In Chapter 8, the impact of doing a narrow discount rights issue was evaluated.
and here a similar illustration is used to highlight how a deep discount rights issue works.

The example given in Working insight 10.3 shows a company trying to raise substantial funds which it intends to use to repay some of its excessive outstanding debt. The suggested means of raising new equity is to sell it at a big discount to the existing share price; that is, a deep discount rights issue. The deep discount simply means that more shares have to be issued to achieve any given fund-raising objectives. Thus in this example the company has to offer a two for one rights issue (i.e. issuing two new shares for each share held) at a price of 25 p. Had the rights exercise price been set at 50 p, a one for one rights issue would have been sufficient; at 100 p, the £250 million could have been raised by selling only 250 million new shares. Remember that any extra shares over this minimum 250 million should therefore be regarded as bonus shares.

As discussed in Chapter 8 this means that the terms of the rights issue should not matter, as they cannot make any theoretical difference to the value of the company. However, companies and their advisers obviously believe pricing of rights issues is important, because otherwise they would not spend so much time and money deciding how best to attract investors to subscribe new money.

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**Figure 10.1**

**Declining industry transformation strategies (using Boston matrix)**

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Star</td>
<td></td>
<td>Dog</td>
</tr>
<tr>
<td>Cash cow</td>
<td></td>
<td></td>
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</tbody>
</table>

- Star: A single company rationalizes the industry by taking over small competitors until it acquires a dominant share of the market. This dominant share enables it to achieve much greater financial returns than the individual companies could achieve previously.

Note: A single company rationalizes the industry by taking over small competitors until it acquires a dominant share of the market. This dominant share enables it to achieve much greater financial returns than the individual companies could achieve previously.
A large risk associated with the narrow discount rights issue discussed for the growth company in Chapter 8 was that the rights-inclusive share price could fall below the exercise price of the rights during the rights offer period. This risk could be hedged, but these underwriting costs were described as ‘inefficiently high’. If the scale of the discount were increased there might be a lower perceived risk of the rights having no value. In Working insight 10.3, the current share price of £1 is predicted to fall to 50 p because of the deep discount offered and the consequent number of new shares which have to be issued. However, the rights are being offered at an exercise price of 25 p so that the market price would have to halve again before the rights had no value. The company may decide not to underwrite the issue or, if underwriting is taken up, the premium charged should be significantly reduced as the risk of the effective put option being exercised by the company is now lower.

(At least, it would be lower if investors behaved totally rationally but there is a great deal of psychology in pricing rights issues. If the market believes that successful growth companies raise new equity through narrow discount rights issues, it tends to accept that a company offering a narrow discount rights issue is successful and has good growth potential. Conversely, if deep discount rights issues are normally made by very mature or declining companies with negative growth prospects, the market may assume that any company making such an issue must have those attributes.)

A key issue is how will investors respond to such an offer. Investors owning 1,000 shares in DOG plc receive their notifications of their rights to buy another 2,000 shares in the company at the very reduced price of 25 p per share. Even if
they like the deep discount, taking up the offer requires them to invest another 50% (£500) on top of the current value of their investment in DOG (£1,000). This is a high proportionate increase in investment in one share and for a rational investor this may unbalance the investment portfolio. Other investors may be feeling unhappy about their investment in the company, because, in this example, it is overleveraged and has no positive growth prospects.

There is a strong possibility that many investors may not want to take up their rights. This possibility is increased when the alternative of selling the rights and obtaining cash is added in. Instead of investing an additional £500, the investor with 1,000 shares should be able to sell the associated 2,000 rights and receive £500 in cash. Of course if the market responds properly, there is no resulting change in value from either course of action but the perception of investors may be different.

If a lot of investors decide to sell their rights, the law of supply and demand means that the rights value will fall. The rights exercise price is fixed so that, if the rights value falls, the share price must also fall by a considerable amount. The decline in share prices closes the gap between it and the rights exercise price, thus making the rights offer look even less attractive than before. Deep discount rights offers have been known to fail when investors simply lost

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**Reducing risk perceptions and adding value**

Death Or Glory plc currently has to pay a premium interest rate of 10% before tax (compared to the normal rate for similar companies of 8%) due to its high debt to equity ratio. Its shareholders’ required return is also higher, due to increased perceptions of the risk of financial collapse: thus DOG’s cost of equity capital is 16% compared to the 12% demanded from similar companies with normal leverage ratios.

Extracts from DOG’s financial data are as follows.

<table>
<thead>
<tr>
<th></th>
<th>£millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit</td>
<td>250</td>
</tr>
<tr>
<td>Less: interest expense</td>
<td>100 (£1 billion at 10%)</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>150</td>
</tr>
<tr>
<td>Taxation</td>
<td>50</td>
</tr>
<tr>
<td>Profit after tax</td>
<td>100</td>
</tr>
<tr>
<td>Number of shares</td>
<td>500 million</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>20 pence</td>
</tr>
<tr>
<td>P/E multiple</td>
<td>5 times</td>
</tr>
<tr>
<td>Share price</td>
<td>100 pence</td>
</tr>
</tbody>
</table>

*Note: A P/E multiple of five is applied, as this is slightly below the inverse of the company’s cost of equity capital (16%). This reflects the fact that (a) the company is declining rather than at steady state and (b) there is a risk premium due to the over-gearing.*
confidence in the company and its shares; not least because the company was offering lots of new shares at 25 p when they are supposed to be worth £1. The danger is that investors start to believe that the £1 share price was wrong and that 25 p is a better reflection of the true value of all the shares.

In addition to being used by declining companies, deep discount rights issues are also of use in company restructuring. Chapter 16 gives illustrations of this.

## ADDING VALUE BY REDUCING DEBT RATIOS

Death Or Glory plc is actually raising these new equity funds in order to increase shareholder value by reducing its debt:equity ratio. How this can work is illustrated in Working insights 10.4 and 10.5, which indicate the way in which excessive risk perceptions lead to greater demands for returns, which can drive down investment values.

Normally an increase in the proportion of equity funding would lead to an increase in the weighted average cost of capital (WACC), because the cost of equity is greater than the cost of debt. However, if the existing funding mix contains substantial risk premiums which can be reduced or removed by a change

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### Post-rights issue position

If DOG raises £250 million through a rights issue it will be able to reduce both its borrowing cost and its cost of equity. However, the relative proportion of equity in its financial structure will rise, as the new funds are used to repay some of the existing debt. Assuming nothing else changes, the post-rights P&L can be restated as follows.

<table>
<thead>
<tr>
<th>Description</th>
<th>£millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit</td>
<td>250.0</td>
</tr>
<tr>
<td>Less: interest expense</td>
<td>60.0 (£750 million at 8%)</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>190.0</td>
</tr>
<tr>
<td>Taxation</td>
<td>63.3</td>
</tr>
<tr>
<td>Profit after tax</td>
<td>126.7</td>
</tr>
<tr>
<td>Number of shares</td>
<td>1,500 million (1 billion new share issued)</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>8.45 pence</td>
</tr>
<tr>
<td>P/E multiple</td>
<td>6.7 times</td>
</tr>
<tr>
<td>Share price</td>
<td>56.6 pence</td>
</tr>
</tbody>
</table>

The company’s cost of equity has decreased to 12% due to the lower perceived risk of financial collapse. However, as a declining company, the P/E will still be lower than the inverse of the cost of equity. In Working insight 10.4 we reduced the ‘steady state’ P/E of 6.25 by 20% to arrive at five; here we reduce the ‘steady state’ P/E of 8.3 by a similar proportion, to 6.7 times. In practice, the P/E may be slightly higher than this, reflecting a rerating by the market.
in financial strategy, the overall WACC can actually reduce after the injection of new funding. This would obviously lead to an increase in equity value as discussed in Appendix 1 and highlighted in Working insight 10.5.

If the stock market saw no value added from DOG’s rights issue, the post-rights share price should fall from 100 p to 50 p as shown in Working insight 10.3. However, the reductions in both borrowing costs and shareholders’ expected returns mean that the share price should move to 56.6 p rather than to 50 p; thus producing increased value for the existing shareholders due to the reduction in risk premium demanded.

### KEY MESSAGES

- No further investment should be made in declining businesses, so the cash flows will be neutral or positive. The low business risk means that funding should be through debt. Dividend payout should be the maximum possible, constrained only by the availability of retained profits or cash generation.
- If the company has taken on too much debt, value can be created by reducing the level of gearing.

### KEY TERMS IN THIS CHAPTER

- Decline
- Dividend
- Deep discount rights issue

**10.1 RECKITT BENCKISER – MANAGING DIVISIONS IN DECLINE**

Reckitt Benckiser, the Anglo Dutch household products group, made a strategic decision to manage certain of its divisions using a ‘decline’ strategy. The company had attempted to sell these non-core divisions, but prices were not acceptable. Accordingly, it announced that these businesses would be run separately from the rest of the group, with the aim of maximizing total cash return. This releases cash for the group to reinvest in areas in which it can generate better returns.

Part 3

Financial Instruments

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# Financial instruments: The building blocks

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In previous chapters we established that investors require a return to compensate them for the risk they are taking by making an investment in a company’s securities. That return can come from a running yield on their investment, or through a capital gain on the sale of the investment. In this chapter we examine these three building blocks of value – risk, yield, and capital gain – and see how they can be used to build a variety of financial instruments. We show how black and white distinctions between ‘debt’ and ‘equity’ become blurred as different instruments are designed.

The different ways in which risk can be mitigated are considered, as are the various common forms through which companies provide yield and potential gain to their investors. We note that companies have different requirements, and these should be matched to the requirements of investor groups in order to design the most efficient financial structure.

Investors need to make a return on their money. That return can come from a yield or a capital gain, or both. The amount of return they require depends on the level of risk that they perceive they are taking. Within this simple framework there is a vast panoply of financial instruments that can be created to serve the different needs of companies and their investors.

Throughout this book we have been talking about debt and equity. Now is the time to define our terms more carefully. What do we mean by ‘debt’, and how do we differentiate it from ‘equity’? In this chapter we will answer those questions, and explain the building blocks used to create all financial instruments. Chapter 12 will describe some of the more common financial instruments, and discuss how and why they are used.

It is worth noting that the risk–return continuum provides an overall regulation of what we can do with financial instruments.

For example, if we lend money to a blue chip company (invest in its debt) we can, at the time of writing, obtain a return of about 6% on the investment. When we make the investment the company is contracted to pay us a fixed level of interest at agreed intervals, and to return our money when the debt falls due for repayment. Should the company fail to do this we will have redress to the law, and perhaps have security\(^1\) over its assets; lending to such a company is

\(^1\) It should be noted that the term ‘security’ has two separate meanings. This chapter has so far been discussing securities as a generic term for financial instruments. The term is also used to refer to a mechanism which gives the investors some further means through which they can be repaid if the company defaults, for example, the ability to repossess assets.
Financial instruments: The building blocks

a relatively low-risk activity, and thus we should only expect a relatively low return.

Contrast this with the situation were we to invest in the ordinary shares of the same company. As shareholders we may or may not be paid a dividend, depending on the company’s results and the directors’ intentions. We may, if the company succeeds in the stock markets, be able to sell the shares for a huge capital gain at some point in the future; but there is no guarantee of this – the company may just ‘crash and burn’ and we could lose everything in a liquidation.

So, whereas we can reasonably anticipate the returns that we will obtain on the debt investment, there is huge volatility in the expected return from an investment in shares. That volatility of anticipated return is the risk we take, and it is for this that we need to be compensated. If debt pays us 6%, we will demand a much higher return from our shares, as shown in Figure 11.1.

As discussed in Chapter 1, it is also worth noting that individual investors perceive risk in different ways, and thus demand different levels of return for what is technically the same amount of risk. One of your authors has a very low risk threshold for personal investment, preferring the certainty of a secure retirement to the possible glory of earning millions on speculative investment. This risk/required return profile looks like that shown in Figure 11.2.

However, a venture capitalist may see the risk/return spectrum in an entirely different way. Such an investor is really not interested in low-risk investments, as their whole raison d’être is in making high gains on more speculative investments. Their risk profile looks more like that shown in Figure 11.3.

Knowing that the market includes investors with different appetites for risk, a company can design its financial instruments to suit a particular class of investor. In the next section, we discuss the parameters within which this can take place.
As stated above, the return investors require is dependent on their perception of the risk inherent in their investment. That return will comprise some combination of yield and the upside which comes normally from a capital gain. Thus, the three building blocks we can manipulate are:

- Risk
- Yield
- Upside

Each of these is now considered in turn.
In order to reduce the return that the company has to pay, the risk to the inves-
tor has to be managed down. This can be done in several ways: giving the
investor a way out; providing security to the investor; providing guarantees,
often from a third party; and the use of restrictive clauses known as covenants.

1. Giving the investor a way out: If a company guarantees to redeem a finan-
cial instrument, the investor is taking less risk than if their ultimate repayment is
to come from a sale of the security on the markets. Accordingly, one way to
reduce investors’ risk is assure them of a way out, by repayment or redemp-
tion, or conversion into another valuable asset. Furthermore, all other things
being equal, a security that is due for repayment in 2 years should be safer for
the lender than one which will be repaid in 20 years – just because so much
more could happen to the business in the longer time period. Therefore,
investors’ risk is reduced still further if the investment life is relatively short.

2. Providing security: The company can provide security to the investor, often
referred to as a ‘charge’ on the company’s assets, such that if it fails to meet
the terms of the agreement, the investor can protect their downside in some
way. For example, a debt may be secured on a property owned by the com-
pany (the collateral); should the borrower fail to pay interest, or to repay the
loan on the due date, the lender can seize the charged property and sell it off
in order to recover the monies owed. This gives the investor another way out
in case the company fails to meet its contracted obligations.

Under current UK law, security comes in two flavours – fixed and floating.
The difference between them is quite technical, but broadly a fixed charge
is one over specific assets such as buildings or fixed plant, and a floating
charge is a charge over assets which change on a daily or weekly basis,
such as inventories. In a liquidation, the holder of a fixed charge can use
the proceeds of selling those specific assets in order to recover their due
debts. Holders of floating charges can be repaid from the monies released
by selling these assets, but they have a lower priority to the fixed charge
holders and to various statutory creditors. However, any type of security
puts the lender in a better position than the unsecured creditors.

If a lender takes security, it is important to ensure that the security will
be worth something if sold separately from the failed business. We spoke
in Chapter 4 about strategic assets, ones that are rare, inimitable, and valu-
able. If these are too company-specific then however valuable they are to
the ongoing business, they will be inappropriate to use as security for the
lender as they would have no resale value. Such assets, not being condu-
cive to carrying debt, should be financed by equity.

3. Providing a third party guarantee: Investors need to ensure that their downside
is limited. However, there is no law that says that the company itself has to
provide this assurance. If the company is unable to provide the assurance, it
is possible that a third party could do so. For example, a holding company or
a major shareholder might agree to guarantee the loan as might, for a fee, a
bank, or insurance company.
4. **Covenants**: Covenants are conditions in a loan contract which protect the lender by stating what the borrower may or may not do. Covenants come in two types – positive and negative.

Positive covenants are loan conditions which state what the borrower must do. For example, the borrowing company must deliver management accounts within a certain period after the month end; must deliver audited annual accounts within a given timeframe; must maintain agreed levels of accounting figures and ratios (such as the level of equity or the working capital ratios).

Negative covenants are clauses which prevent the borrower from undertaking certain actions. For example, negative covenants will prevent directors’ remuneration being increased above a pre-agreed level, so that the business loan is not immediately transferred to the directors’ benefit. In the same way, there will be covenants preventing large dividends being paid, or setting a maximum level of pay for other employees. There will also be covenants in place preventing a company from taking further loans, which may have precedence in repayment, unless the lender gives consent. Negative covenants will also prevent the company from spending large amounts on fixed assets that have not been previously agreed with the bank: this ensures that the monies borrowed are spent on the new factory rather than the director’s Ferrari!

The main use of covenants is that a breach of the covenant terms can enable the lender to demand repayment of the loan, even though its term is not yet due. The ability to demand such repayment is valuable to lenders, allowing them to recover their money before things get worse. However, it should be noted that in some instances lenders will accept a breach of covenants, as they are aware that calling in the loan could result in the company going into liquidation without their being able to realize their money.

Working insight 11.1 gives some examples of ‘maintenance covenants’ which relate to a company’s financial reports, and Case study 11.1 gives an example thereof, in respect of Eurotunnel.

It is essential that all parties to the loan agreement understand the accounting conventions being used when calculating these covenanted ratios, and the implications of changes to accounting policies. This has always been a problem, as not all of the lawyers involved in drafting agreements will be very accounting-literate, and many such covenants have been made meaningless due to sloppy definitions.

The adoption of International Financial Reporting Standards (IFRS) in most jurisdictions has led to great changes in the way assets and financial instruments are shown in the balance sheet, and the way in which interest and financial charges are shown in the income statement. Companies which appeared highly solvent under one set of accounting conventions can seem remarkably vulnerable under a different one. This topic is discussed further in Chapter 12, and we return to it again throughout the book.

In addition to the various rights discussed above, which tend to be attached to debt instruments, some types of equity may also include risk-reduction
Financial instruments: The building blocks

Rights. This is most common in private equity deals, particularly with institutional investors. For example, the investor may have rights of veto over certain transactions, such as a sale of part of the business. Or they may have additional voting rights in all or some circumstances.

YIELD

The yield of a security includes any payment made to the investors during the period for which the investment is outstanding, other than payments which reduce the capital balance. Thus, practical examples include interest on loans and dividends on shares. Share repurchases or loan redemptions would not be included in yield, as they are capital items.

The yield can be a regular payment, such as contracted quarterly interest, or can be on a more irregular basis, such as an occasional dividend. It can be for

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2 Earnings Before Interest, Tax, Depreciation and Amortization.
a set amount, again such as interest, or at the discretion of the paying company. The fact that a yield is at the discretion of the paying company does not necessarily make it an unpredictable amount – Chapter 13 points out that companies which pay dividends need to maintain a track record of level or increasing payments; this is an example of a discretionary payment which the investor has come to expect.

Yields are often linked to an underlying reference point. For example, interest rates on debt may be fixed rate or floating. Floating rate loans charge interest based on a premium over a reference rate such as LIBOR (London Inter Bank Offered Rate). For example, the contracted interest rate might be set at LIBOR plus a premium of 1%\(^3\). If LIBOR is 5%, then the interest rate paid on the loan will be 6%; if LIBOR rises to 5.5%, the loan will be charged at 6.5%.

Floating rate interest can reduce risk for the lender, as it ensures that the lender will always receive ‘market’ rates on the loan. However, it leaves the borrowing company vulnerable to rises in market rates: in the example above, were LIBOR to rise to say 15% (which was the case in the late 1980s), the company would have to pay 16%, which may stretch its cash flow considerably. In order to minimize the borrower’s risk in this, interest rate management tools such as caps and collars can be used. The Annex to this chapter set out details of some interest rate management tools.

Yield need not be as predictable as regular interest payments, or dividend payments on a particular trend. As discussed in Chapter 9, one of the authors was involved in designing a capital instrument to finance the construction of a wind farm, in which the main objective was to return as much cash as possible to the investors, subject only to bank restrictions. The yield on this instrument was determined as the amount shown as free cash flow (strictly defined) in cash flow forecasts for the wind farm for the following 6 months; once the banks’ requirements were met, all of the free cash was paid out to shareholders.

**Upside**

The investor obtains an upside from selling the security for an amount greater than was originally invested in it; the upside is the capital gain. The upside can come from various different sources:

1. Ultimate sale of the financial instrument to another investor.
2. Redemption of the instrument at a premium by the investee company, the premium being paid in cash or in the securities of the investee company.
3. Redemption at a premium, with the premium denominated in the securities of another company or in another asset.

Each of these is considered below.

1. **Sale of the financial instrument to another investor**: This form of exit is most commonly seen by purchasers of shares listed on a stock exchange. The shares are liquid, in that there are many potential buyers and sellers, and the market sets a price. The holder of the investment can choose to sell at the market price,

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\(^{3}\) The premium would actually be stated as 100 basis points. A basis point is 1/100 of a per cent.
or can continue to hold the shares in the hope that the price will rise. The difference between the ultimate sales proceeds and the initial amount invested is the capital gain. (This will probably be subject to tax in the hands of the investor, but such taxation is country specific, may indeed be investor-specific, and is outside the scope of this book.) The company that issued the shares has no interest in this disposal, which is strictly between the buying and selling investors. There is also no guarantee that the disposal price will be greater than the price originally paid for the investment.

2. Redemption by the investee company at a premium: Many financial instruments have a defined life, and incorporate a contract to the effect that the company will redeem the instrument at the end of this period. If the agreement is that redemption will take place at par, that is, with no uplift, then the investor’s return comes solely through the yield. However, although the investee company may agree to redeem the security at cost, there is often a redemption premium which gives the investor a capital gain. The premium may be for a fixed amount, or dependent on other factors. An example of a fixed premium might be:

   Company A issues £1,000,000 of a security which will be repurchased in 5 years’ time for £1,200,000.

This gives the investor a capital gain of £200,000 in addition to any yield on the security.

   (It is also common for securities which give a repayment premium to carry ‘zero interest’ as a coupon, with the investor’s return being totally rolled up in the final payment.)

   Another way of structuring this transaction would be to issue the security at a discount:

   Company B issues a security with a face value of £1,200,000, for £1,000,000. In 5 years’ time the security will be redeemed at face value.

This ‘deep discounted bond’ achieves the same effect as in Company A, but the tax treatment may differ.

   Instead of a fixed premium, the ultimate amount of capital gain may be unknown when the investment is made. For example:

   Company C issues a security for £1,000,000. In 5 years’ time the £1,000,000 will be repaid and, in addition, the investor will receive shares representing 2% of the equity of Company C.

Here, the value of the upside (known as an ‘equity kicker’) is dependent on the value of Company C’s equity in 5 years’ time; the investor is taking the risk that Company C will perform well, and the potential upside will indeed be valuable. The deal could also have been structured in a different way, as follows.

   Company D issues a security for £1,000,000. In 5 years’ time the investor has the option either of receiving £1,000,000 cash in redemption of the security, or of receiving 200,000 of Company D’s shares.
In this example, the investor obviously expects that 200,000 of Company D’s shares will be valued at more than £1,000,000 in 5 years’ time – that is, that the share price will exceed £5 per share. If the share price is higher than £5, the investor will obtain the capital gain by converting the security into shares in Company D. If Company D has not performed well, the investor will instead ask for the £1,000,000 in cash.

3. **Redemption by the investee company with a premium in securities of another company or in another asset**: Yet another way to obtain the capital uplift would be to enter into an agreement that gave the investor rights over another company’s securities. This can be illustrated using an example.

Company E issues a security for £1,000,000. In 5 years’ time, the investor can either redeem the security for £1,000,000 cash, or can exchange it for 100,000 shares in Company F. As in the case of Company D, the investor is gambling on a share price rise, this time it is the price of Company F that is critical.

Normally, if the capital upside is structured to come from the shares of a third company, there will be a link between the issuing company and the third party. For example, Company F might be a spun-out subsidiary of Company E, or maybe Company E holds shares in Company F as part of a trade investment which it seeks, long term, to reduce. Similarly, there is no reason why the upside should not come from the proceeds of sale of another asset, for example, a business property. The key point is that the issuing company should be able to deliver to its investors the asset(s) providing the upside at the time they are required.

Instead of the above, some venture capital investors may have what is known as **liquidation preference**, which combines risk reduction with protection of the potential upside. The terminology is slightly misleading: this is not necessarily to do with a distressed sale, but relates to the way in which any proceeds of disposal of the shares are distributed, which could be in a normal sale as well as a liquidation. If the investor has a liquidation preference, they are entitled to be paid out prior to the other investors – so, if there is insufficient money to pay everyone, they get preference. Furthermore, it is possible to have a preference multiple: a share with a 3 times liquidation preference would be paid out 3 times the face value of the shares before any other investor was paid.

**DEFINING ‘DEBT’ AND ‘EQUITY’**

Now that the basics have been explored, we are ready to look at the two fundamental financial instruments – debt and equity. How do these compare on our three headings?

Debt is a low-risk instrument from the lender’s point of view (although, of course, it is high-risk to the borrower). A contract is entered into which specifies how long the monies will be outstanding, and schedules their repayments; legally, the lender is a creditor of the company. The agreement also states what interest (the yield) is to be paid, and how. The lender’s downside is often
Financial instruments: The building blocks

protected by taking security over specified assets of the borrower. Further downside protection may be obtained through the use of covenants – loan clauses which state clearly what the borrower may and may not do while the loan is in place. During the term of the loan repayments are made, to the agreed schedule, which fully repay the capital balance. There is no upside for the lender; the return comes only by way of yield.

Contrast that with equity, in the form of ordinary shares. This is permanent capital for the company. The investor puts money into the company with no guarantee of any return at all. The yield comes, if it comes at all, at the directors’ discretion, dependent on the levels of cash and profit, and the company’s future investment needs. If the company does well, there may be an upside, in that the shares can be sold at a profit. However, there is no guarantee that the company will do well, or its value will be recognized by the market. This is a high-risk investment.

Table 11.1 summarizes the basic characteristics of debt and equity.

To give an example: in 1976 the sales revenue of Microsoft exceeded $1 million for the first time. If your authors had at that time lent $5,000 to the fledgling Microsoft, we would have handed over the money, received interest for a few years, and then been repaid our $5,000. If instead we had invested $5,000 of private equity in Microsoft stock . . . we would not have needed to work so hard for the royalties on this book!

MANIPULATING THE BUILDING BLOCKS

We have established that the financial instrument must offer investors a return commensurate with the risk they perceive, and that such return will be derived from a yield and/or a capital gain. From these basic concepts, two important ideas can be developed:

1. The expected return on a financial instrument must be consistent with the investor’s perceived risk.
   
   Therefore, target instruments at categories of investor who will understand the risks involved, and not charge a premium for their lack of understanding.

2. The return will come from yield and upside.
   
   Therefore, an instrument with very high yield would be expected to provide little or no upside, and investors agreeing to receive no yield would anticipate the possibility of a high capital gain.
One final point is worth noting. We established in Chapter 4 that companies in the launch and growth stages of the life cycle should be financed mostly with equity; those in later stages can afford debt financing. The reasons behind this financial strategy relate to the business risk of the different stages, and to the companies’ requirements for funding for growth. These arguments can be extended to consider the different types of financial instrument that a company may wish to use.

Figure 11.4 illustrates the yield/gain continuum of possibilities for providing return to investors. On the left hand side of Figure 11.4, investors receive a return from yield only. This is appropriate when business risks are low. As business risk increases (and, generally, the need for funds for growth also increases) it becomes advisable to provide the return less by yield and more as capital growth. At the extreme right hand side of Figure 11.4, high-risk companies use instruments with no yield at all.

Chapter 12 discusses various different types of financial instrument on the market, and shows how these principles are met in practice.

**KEY MESSAGES**

- Financial instruments need produce a return to match the investors’ perceived risk. This return comes from a mixture of yield and capital gain. The capital gain can be market-generated or can be pre-agreed by the investee company, or a mixture of both.
- Risk can be mitigated by having covenants to protect the investor’s position, or by taking security over assets of the company.
Low-risk instruments tend to give all of their return as yield, for example, as interest payments. High-risk instruments give their return as gain. In the middle of the risk–return continuum, instruments can be structured giving a combination of the two.

Interest rate management tools such as caps and collars can be used by the company to protect its position.

**KEY TERMS IN THIS CHAPTER**

Basis point  International Financial Reporting  
Cap  Standards (IFRS)  
Capital gain  LIBOR  
Collar  Liquidation preference  
Collateral  Perceived risk  
Covenant  Security (charge on assets)  
Debt  Security (financial instrument)  
Equity  Swap  
Equity kicker  Upside  
EURIBOR  Yield  
Floor  Zero cost collar

**ANNEX: INTEREST RATE MANAGEMENT TOOLS**

Interest rate management tools are used to lower the financing risk for companies which have borrowed at a floating rate. Floating rate loans bear interest based on a reference rate plus a premium. If the reference rate falls, the company will pay less interest. However, unexpected increases in market interest rates could lead to the company having to pay a much larger than anticipated charge: the interest rate management tools can help protect against this.

**REFERENCE RATES**

In the UK the reference rate most commonly used is LIBOR (London Inter Bank Offered Rate – the rate at which banks lend to each other in London). The equivalent rate for the countries within European Economic and Monetary Union is EURIBOR. Both LIBOR and EURIBOR are widely used as reference rates outside their geographical areas. When we refer below to LIBOR, much of what we say applies to all reference rates.

There are several different types of LIBOR, representing money being lent for varying periods. The rates most commonly used as reference points for floating rate debt are 3-month LIBOR and 6-month LIBOR. A rate for LIBOR is set every

4 If market interest rates rise, the company could face a ‘double whammy’. Not only will the company’s interest charge increase, but the economic factors behind the rate rise may lead to depressed sales, low profits and cash flow problems. Alas, the interest rate management tools only deal with the interest charge – the rest is still management’s problem.
working day by the financial markets, and it will vary depending on supply and demand and market conditions.

As an example, CapCo might borrow say £1 million for 2 years at a rate of 3-month LIBOR plus 2% (200 basis points). On the first day of the loan, 3-month LIBOR might be 5%; this means that CapCo will pay interest at 7% (5% + 2%) for 3 months. At the end of the 3 months, the new rate for 3-month LIBOR would be used to set the rate of interest due for the next 3-month period. If 6-month LIBOR had been used as the reference rate, CapCo’s interest would have remained at that level for 6 months.

**CAPS, FLOORS, AND COLLARS**

CapCo may be comfortable borrowing when LIBOR is 5%, and may be relaxed about LIBOR rising to say 9%. However, at levels above that there may be problems in meeting interest payments. In order to protect its position, the company can buy an interest rate cap. This is in effect an insurance policy that prevents the company having to pay interest at more than a given rate.

For example, Barland Bank has lent CapCo £1 million for 2 years at 3-month LIBOR plus 2%; 3-month LIBOR is currently 5%. The company wishes to ensure that even if LIBOR rises above 9%, it will not have to pay any more than a total of 11% on its loan (i.e. 9% + 2%). Accordingly, it can buy a LIBOR cap at 9%.

There are several points to note about buying the cap. Firstly, the cap need not be acquired from Barland Bank, who provided the loan. In fact, Barland need not even know about the existence of the cap – CapCo has in fact bought it from ScotWest bank, and it is a separate financial transaction to the loan. This leads to the second point: technically, having a cap does not prevent the company having to pay high interest rates to its lender – it just means that it can offset this extra interest by the receipts from the bank which sold it the cap. So, if LIBOR were to rise to 12%, CapCo would have to pay Barland interest at 14%, but would receive interest back from ScotWest amounting to 3%, leaving it paying a net 11%. And the third point to note is that although the loan is for £1 million, the cap could be for less than that amount, or more, if CapCo wishes to speculate on interest rates.

Acquiring the cap will cost CapCo an up-front payment, the level of which depends on the rate capped, and the time for which it is needed. For example, if our company wanted to cap LIBOR at 6%, it would be a great deal more expensive than capping at 9%; similarly, a 6-month cap would be cheaper to buy than a 2-year cap.

Should CapCo wish to avoid paying for its cap, it could enter into a transaction to sell a floor to a bank. Just as buying a cap means that the company’s interest rate will never move above a certain amount, selling a floor means that even if market rates fall the company will not be able to take full advantage of it. So CapCo might sell ScotWest (or another bank) a LIBOR floor at 4%. This would mean that should LIBOR fall to say 3%, CapCo would be paying Barland interest on its loan at 5% (3% + 2%) but would also be paying 1% (4% − 3%) to ScotWest which owns the floor.

The purchase of a cap and a floor together is known as a collar. Terms can be set such that the amount that the company has to pay for purchasing the cap
can be exactly offset by the amount the bank is paying it for the floor. This is known as a **zero cost collar**.

**SWAPS**

Another type of interest rate management tool is an interest rate swap. Here, as an example, a company which has borrowed at a floating rate agrees to swap interest rate payments with a counter-party which has borrowed at a fixed rate. There may be several reasons for doing this – perhaps our company cannot borrow floating rate in the market, or perhaps the other company is changing its financing strategy and wants to move out of fixed interest. Alternatively, the swap might be done because both parties can make money on it – based on comparative advantage.

The theory of comparative advantage argues that two parties can benefit from trading, even when one of them is more efficient in all cases than the other. In terms of interest rate management, it is most easily explained by an example.

SwapCo can borrow in the markets at 8% fixed rate, or at LIBOR plus 2%. FixCo can borrow at 6% fixed rate, or at LIBOR plus 1.5%. It can be seen that FixCo has the advantage on both types of borrowing:

<table>
<thead>
<tr>
<th></th>
<th>Fixed rate</th>
<th>Floating rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>SwapCo</td>
<td>8%</td>
<td>LIBOR +2%</td>
</tr>
<tr>
<td>FixCo</td>
<td>6%</td>
<td>LIBOR +1.5%</td>
</tr>
<tr>
<td>FixCo’s comparative advantage</td>
<td>2%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Each company wants to borrow £1 million. SwapCo would like fixed rate funds, and FixCo would like floating rate funds. If each of them were to borrow the types of funds they wanted, the total rate they would pay would be LIBOR plus 9.5%. However, if SwapCo were to borrow floating rate and FixCo at a fixed rate, the total they paid would be LIBOR plus 8%. It is thus worthwhile for them to borrow at the combined lower rate, and then to swap payments.

So, SwapCo will borrow £1 million at a floating rate, paying LIBOR plus 2%. FixCo will borrow £1 million at 6% fixed. Then the swap agreement will ensure that SwapCo makes the payments at 6% fixed, and FixCo pays at LIBOR plus 2%. The overall saving of 1.5% can be split between the two, and used to reduce FixCo’s payment to (at most) the LIBOR plus 1.5% that it would have paid on its own.

In practice, swaps are much more complex than this, and are rarely done company-to-company: generally a bank will stand in between the parties.
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OVERVIEW

As discussed in Chapter 11, financial instruments can be constructed from any commercially acceptable combination of risk protection, yield, and upside potential. Thus, companies can select potentially a wide variety of financial instruments to meet their exact needs, and those of their investors.

In this chapter we examine the factors affecting the choice of financial instrument, and discuss the characteristics of some of the commonly used financial instruments. We show that the distinction between ‘debt’ and ‘equity’ is blurred, and that there is in fact a continuum of financial instruments which have debt-like and equity-like characteristics. Option theory can be used to identify in any situation which instrument has preferential claims over others; this is perhaps the best way to define ‘debt’.

WHAT DO COMPANIES NEED?

As set out in Chapter 4, the basic tenet of sound financial strategy is that the company should match its financing risk to its level of business risk. Companies with a high level of business risk should try to ensure that they do not add to the volatility of their results by taking on financial risk. Similarly, companies with a low business risk will find it worthwhile to use financial instruments that increase their risk profile but reduce their average cost of capital.

Chapter 11 looked at the risk of financial instruments from the point of view of the investor, and stated that debt was relatively low risk, and equity high risk. For the company, of course, the risk relationship is reversed. Borrowing is a high-risk activity for companies, as they have to find the resources to make interest payments and repay the principal. Equity is low-risk finance for a company as it is permanent, the shareholders having no contractual right to payments from the company.

In addition to the fundamental business risk–financial risk relationship, companies structuring long-term financial instruments should concern themselves with two other variables: cash and profits.

Companies which are cash-constrained are best served by using financial instruments that do not demand any significant outflows of cash, at least in the short term. Growing companies, needing their resources to fund expansion, do not wish to pay out such resources to repay their lenders; they are better off with equity, or with an instrument that delays payouts. However, companies which are generating significant cash flows may be able to use debt, knowing that they have the means to repay it.

The profit impact of the financial instrument is a somewhat different matter. Although we have already established that shareholder value has only an indirect link to current profit, the effect on profits (and in particular earnings per share, eps) will also need to be considered by companies in their financing structure, as it might impact on the market’s perception of them. Profit reduction due to interest payments may lead companies away from the use of debt, or towards an instrument that dilutes profits in the longer term but not the short term.
DIFFERENTIATING FINANCIAL INSTRUMENTS USING OPTION THEORY

Shortly, we will introduce a model of the continuum of financial products, ranking each in order on the risk–return continuum. Before we do that, this section discusses option theory as a method of making these rankings. (Option theory is discussed more fully in Appendix 2.)

The right to buy something is known as a call option; the right to sell is a put option. These concepts can be helpful in trying to distinguish between different classes of debt and equity sources of funding, provided we have a clear understanding of the relative rights and responsibilities of each party providing finance to a company.

It is generally accepted that in a company with outstanding debt, the equity can be regarded as a call option on the assets of the business, at an exercise price equal to the value of the outstanding debt. This is because if the shareholders want to maintain control of the business, they must ensure that the debt obligations are met, otherwise the debt holders will exercise their rights as creditors of the company, and (by appointing a receiver or liquidator) take control of the assets. Thus the repayment of the debt is the amount to be paid to take control of the unencumbered assets of the company.

An alternate way of looking at this is that the shareholders could be seen as holding a put option on the company’s assets to the debt holders. Thus, if the gross value of the company exceeds the value of debt, the shareholders will exercise their call option, repaying the debt and regaining control. Should the gross value of the company be less than the value of debt, shareholders can utilize their put option and let the creditors take control of the assets, walking away from the business. (Of course, this only works in situations where the shareholders have limited liability.)

How does this help us to clarify the graduations from debt to equity? It certainly helps to rank the order of priority of these different types of funding, because it focuses attention on which parties have options. However, you will see when we reach the next section that in practice there is a whole series of options held by each type of financial instrument over its neighbours.

The discussion on methods of risk protection in Chapter 11 suggested that the primary method of protecting the downside is that the instrument should have another way out. This is a good place to start in defining debt: debt has another way out. If the business fails to meet its contractual obligations, the lender can realize the security charged in its favour. Thus, we could say that the lender has a call option on some of the company’s assets, which they can exercise if redemption is in doubt: the lender has the right, but not the obligation, to call in the receivers.

In ranking financial instruments, the types of option in existence – and who has the right to exercise them – are important in determining priority. In the example above, the shareholders always have the option not to repay the debt. Normally, the lenders’ call option on the assets is only of value if there are sufficiently restrictive covenants surrounding the loan that the lender can act to recover the monies before the value of his/her security has been damaged. If the
lender has minimal covenants in place, such that she/he can only act once the company has defaulted, then the option is worth a lot less than one which could be exercised at an earlier stage, as the assets might already have lost much of their value.

Lenders should also try to protect themselves against the subsequent creation of superior options to their own. They should have covenants in place to prevent the exercise of call options by lenders with a position that should be subordinated to their own. (For example, using terms that will be defined in the next section, one would not expect the lender of junior debt to be able to call in the receivers of a company if the holders of senior debt did not so wish.)

During the credit bubble of 2006/2007, before the debt markets fell to the sub-prime lending crisis\(^1\), many lenders made loans that were known as ‘covenant-light’ (‘cov-lite’) or ‘covenant-loose’. Just as the name suggests, these loans had minimal or very few covenants covering leverage, interest cover, asset expenditure, etc. This was attractive to borrowers, as fewer covenants made it less likely that they would default. However, it was also less likely that the lenders would be able to protect their position in the event of a problem. One reason that lenders were making such loans was to sweeten their offering, as a marketing device to persuade companies to borrow from them. This is always a problem in a credit boom, as lenders can get carried away with the need to make loans, and relax their basic prudence. However, it did seem obvious to us – and to many other commentators – that making cov-lite loans meant accepting a higher risk, and the lenders really should have demanded higher returns to compensate.

ACCOUNTING FOR FINANCIAL INSTRUMENTS

The treatment of financial instruments under International Financial Reporting Standards (IFRS) is complex, and well beyond the remit of this text. Nevertheless, it is important that we set out some basics of the subject, as they have direct relevance to the financial strategies that companies choose to adopt.

To grossly oversimplify, the historical situation was that financial instruments which carried a right to repayment were treated as debt, and everything else was considered as equity. Once issued, financial instruments tended to be left on the balance sheet at their original values. Nowadays, those same instruments are split into their component parts, each of which is shown at ‘fair value’ under debt or equity as appropriate. So, for example, a convertible (discussed later in this chapter) is no longer included in the balance sheet as a liability at its face value, but is included as a liability (the net present value of the future committed cash flows) and an embedded option (the right to convert in the future). Furthermore, as circumstances change, for example the share price rises, or market interest rates vary, the rules on ‘marking-to-market’ make it possible that the balance sheet value and the charge against profits will also change.

\(^1\) As we write (autumn 2007), the developed world financial system is suffering from a credit crunch caused by the realization that subprime lending, especially in the housing market, was considerably riskier to the system than had previously been imagined by those lenders. Debt markets have dried up, and investment banks are reporting billions of dollars wiped off their value.
This has consequences to both balance sheet and income statement. Instruments such as preference shares (discussed later), which traditionally were included with equity, might now be treated as debt\(^2\). This affects the company’s interest charge, its interest cover, and its gearing ratio. The former will reduce profits and the latter two may be the subject of debt covenants, which will need to be redefined. Some companies have reportedly changed their financial structures just to avoid the complications and profit impact of this reclassification of financial instruments, despite the fact that the underlying economics of the situation remain unchanged.

In order to understand a company’s true financial situation, in terms of who owes how much to whom, one really needs to understand the relative rights of the different types of investor and lender. We return to this matter later in this chapter, when we discuss the instruments in terms of the options they carry. In the meantime, we refer you to Case study 12.1, which sets out one of the issues faced by those analysing the financing side of the balance sheet.

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**12.1 LEHMAN BROTHERS AND THE FAIR VALUE OF DEBT**

In September 2007, The Financial Times reported that Lehman Brothers, the investment bank, had improved its reported profits by ‘several hundred million dollars’ by virtue of the fact that the balance sheet value of its debt had reduced. The reason for the debt reduction was that the subprime crisis meant that the company was perceived as more risky, and so the ‘mark-to-market’ rules meant that the interest rate used to discount its future debt payments should be higher: hence the value of debt on the balance sheet was lower.

In other words, the company reported a profit as a direct result of being in a poorer financial position!

(Of course, this could actually be the case. If Lehman’s had repurchased some of its debt in the market it could have paid, for example, $950 to redeem $1,000 face value of debt and thus made a profit of $50: all the financial statements are doing is recording the possibility of such a profit. Nevertheless, to a casual reader of the accounts, this is not necessarily an obvious treatment.)

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One further point to be noted about financial instruments is that they can be the subject of a private transaction, or can be traded on public markets. For example, a company could borrow directly from its bank, or could raise bonds on the markets. From the lender’s point of view, publicly traded debt has the advantage that it gives another way out – the lender can sell the debt before it falls due, releasing the capital for other uses.

\(^2\) We say ‘might’ rather than ‘will’, because the treatment required will depend on the exact terms of the preference share.
If the debt is publicly tradable, it is important to realize that the lender may be able to make a capital gain (or a capital loss) on selling it. The value of traded debt fluctuates depending on its coupon (interest rate based on the nominal amount of the principal) and market rates. Thus, with the low interest rates prevailing at the time of writing, a debt instrument issued several years ago with a coupon of 10% will probably trade at greater than £100 per £100 nominal value. (Chapter 1 explored this in more detail.) Of course, by the time the debt falls due, provided no default is anticipated, the instrument should be trading at exactly £100 per £100, as that is what the investor will be getting.

The fact that a debt is publicly traded may make little difference to the borrowing company, which still has to service the interest and repayments. However, it does give the directors the flexibility of being able to repurchase the debt in the market, and cancel it. For example, The Nielsen Company (formerly known as VNU) has repurchased several tranches of its convertible debt in the past few years, as illustrated in Case study 12.2.

The Nielsen Company bought back debt and made an accounting profit on the repurchase, as shown in this extract from its 2006 financial statements:

A nominal amount of €550 million and €267 million of the €1,150 million 1.75% convertible debenture loan due 2006 was repurchased in various open market transactions and subsequently canceled, resulting in a gain of $1 million for each of the years ended December 31, 2005 and 2004. The remaining principal amount of €333 million was settled at maturity in 2006 at par.

In a separate transaction, the company bought back other debt in 2005, making a capital loss on the transaction, but reducing future interest payments.

Source: www.nielsen.com

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The continuum set out in Figure 12.1 runs from secured debt as the safest instrument (for the investor) up to ordinary share capital as the riskiest. Other securities are shown at points on the risk–return continuum between these two extremes. It should be pointed out that not all of the securities discussed in this chapter are included, and that the positioning of the securities on the risk–return line is inevitably somewhat arbitrary. The actual risk–return position of any security
will depend on the specific terms of the contract under which it is written. Thus, although it is possible to state that high-yield bonds (junk bonds) are riskier than senior debt and will provide a greater potential return, it is not possible in all cases to say whether high-yield bonds are riskier than mezzanine, or vice versa. The chart should be read with a certain degree of flexibility, and an appreciation that the terms of each individual transaction are vital to an understanding of who has what options over which assets, and so which instrument is taking the greater risk.

Set out below are brief descriptions of some common securities and how they are used.

**SECURED DEBT**

*Downside protection: charge over assets; covenants*

*Yield: interest*

*Upside potential: none*

Secured debt is a loan made to the company on the strength of good security, with a registered charge being taken over certain assets (or all of the assets) of the company. Strong covenants would be in place to ensure that the company could not misuse the monies advanced, and to ensure that the lender would have advance warning of any decline in the company’s position. The loan agreement would set out details of the amount of the loan, and the repayment terms (see Working insight 12.1). As the loan is relatively low risk, it should carry a relatively low rate of interest. Accordingly, companies that can afford to borrow (mature businesses with good cash flow and strong asset backing) would make use of this type of instrument.
Types of financial instrument

A company may borrow different tranches of secured debt carrying different conditions. Debt with the strongest claims on the company would be known as ‘senior debt’. From this, we can determine that securities known as ‘junior debt’ will have much weaker claims on the company, and will charge a higher rate of interest to compensate for their greater risk.

LEASING

Downside protection: ownership of assets; covenants
Yield: interest
Upside potential: none

Leasing is a form of secured debt, with the lending being made against a specific asset. Normally, the lease contract is entered into at the same time as the asset is acquired. The lessor retains legal ownership of the asset, and can reclaim it if lease payments are not met. In accounting terms, the leased asset is shown as a fixed asset of the company, and the lease liability under current and long-term liabilities.

Hire purchase is a similar type of contract. The main difference between hire purchase and a finance lease is that under hire purchase the assets technically

3 The type of lease described is a ‘finance lease’. Leases which relate to the short term rental of an asset may be classified as ‘operating leases’. Assets held under operating leases do not, at the time of writing, have to be capitalized on the balance sheet. However, it appears likely that this accounting treatment will be changed. It should of course be remembered that the accounting treatment has no impact on shareholder value, merely on the reported profits.
belong to the borrowing company, whereas leased assets belong to the lessor. There can be great tax benefits in leasing assets, as the lessor company may be able to use the tax allowances relating to the assets, and so pass on a reduced finance charge.

Companies can also raise lease finance on assets that they already own. Such transactions, known as ‘sale and leaseback’, often (but not always) relate to property. A company will sell its property to a finance company in order to obtain a lump sum payment, and then will lease back the premises so that it can continue using them. The amount of the lump sum payment will depend partly on the value of the premises, but also on the credit status of the borrowing company and the agreed ongoing rent: a profitable company that is prepared to pay a high rent will be able to obtain a larger lump sum than one which wants to minimize future rental payments.

**SECURITIZATION**

*Downside protection: charge over assets; may be guarantees*

*Yield: interest*

*Upside potential: none*

Securitization is an example of a broader category of instruments, known as structured finance. This is a blanket term to cover a range of types of debt tailored to an individual company’s needs and often secured on future cash flows rather than on assets. Generally, structured finance can give companies financial flexibility at a relatively low interest rate.

Structured finance has, in the past few years, spawned a profusion of varieties and acronyms. We have the CMO (collateralized mortgage obligation), CDO (collateralized debt obligation), CLO (collateralized loan obligation), and many others. The key word here is ‘collateralized’, meaning that an income stream has been turned into collateral for a loan. For the sake of simplicity, in this chapter we focus only on securitization, as one of the most longstanding examples of the genre.

Securitization is used by companies that have a strong and predictable income stream on which to ‘securitize’ a loan. Effectively, the company sells the future income stream in exchange for a lump sum payment. Although the company itself may not be very creditworthy, its income stream is, and so the lending is based on this.

Securitization has been around since the 1970s, when the US Government National Mortgage Association, a government organization responsible for purchasing mortgages from mortgage originators, issued its ‘Ginnie Maes’ as the first mortgage-backed securities. Although each individual mortgage carries a given chance of non-repayment, by putting together a package of mortgages carrying the same level of credit risk, the portfolio carries a lower default risk, and so is more valuable to the purchaser.

Securitization has three significant advantages to the company.

- It can diversify sources of funds for businesses which otherwise would not be able to obtain debt from these markets.
- It can lead to a lower cost of funds. If the company itself has a poor credit rating, the asset-backed debt may have a much higher one.
- Because the lenders have the securitized assets they do not need covenants from the company, which gives management more freedom in running the business.

When it first became popular, securitized debt could often be treated as an off-balance sheet transaction, reducing the company’s balance sheet gearing. However, under current financial reporting rules, this treatment has become more rare.

Many different types of assets produce an income stream that can be securitized. Examples of securitization include: mortgages, commercial and other loans, credit card receivables, road tolls, car loans, trade debtors, and licence payments. The length of the securitization period will depend in part on the characteristics of the assets being securitized. Possibly one of the most unusual securitizations, a pioneer of its time, was the ‘Bowie Bond’, securitized in 1997 on 10 years of future royalties of the past albums of the singer David Bowie.

The cash flows of a simple securitization are illustrated in Figure 12.2.

The company transfers the assets to be securitized into a special purpose vehicle (SPV) (which may be a company or a trust, depending, \textit{inter alia}, on the tax regime). It is important that there is a clean break between the originator and the SPV, so that investors are not subject to the company’s risk. Investors make a loan to the SPV based on the income stream which will accrue to it: in Figure 12.2 this is the interest and principal repayments over the lives of the loans. The originating company receives a lump sum from the asset sale, plus a regular fee for ongoing management of the asset portfolio on behalf of the SPV.

If the security of the asset stream is not considered to be good enough, the company (or a third party such as a bank or monoline insurance company)
may enhance the credit status of the SPV. This credit enhancement works by ring-fencing the risks, and putting them to the appropriate party. The key determinants of the credit rating are:

- Assets type, and likelihood of risk of default.
- Cash flow – so that bondholders can get their regular cash for interest. When cash flows are less than 100% certain the credit enhancement can take the form of an escrow account to cover temporary shortfalls.

The assets securitized will be divided into several tranches, each with a different degree of risk attached, and so carrying different credit ratings and interest rates. One of the factors underlying the subprime mortgage problems of 2007 was the difficulty in assigning a credit rating to some of these instruments, and the over-optimism of the financial markets as to their combined creditworthiness.

**UNSECURED DEBT**

*Downside protection: may be covenants*

*Yield: interest*

*Upside potential: none*

Unsecured loans bear interest at a higher rate than secured debt, to compensate the lender for the greater risk.

**HIGH-YIELD DEBT**

*Downside protection: may be a charge over assets; may be covenants*

*Yield: interest*

*Upside potential: none*

High-yield debt used to be known as ‘junk bonds’. This is sub-investment grade debt, issued with a rating of below BBB (Standard and Poor’s rating) or Baa (Moody’s rating).

Junk bonds were a very popular source of company finance in the 1980s. However, in the recessions of the early 1990s there were a lot of defaults, and the instrument became less attractive. Perhaps this was the cause of the change of name from ‘junk’ to ‘high-yield’! The bonds came back into fashion in the 1990s, as investors sought instruments that gave a high yield. However, the yields are very susceptible to changes in economic and market conditions, which affect the likelihood of default: the relationship between perceived risk and required return plays out very clearly in the changes in the market price of these instruments.

**PAYMENT IN KIND**

*Downside protection: may be a charge over assets; may be covenants*

*Yield: interest is rolled-up, so no yield payments until the end of the lifetime*

*Upside potential: none, although rolled-up interest is paid out when the bond is repaid*

Many high-risk bonds, although nominally giving a high yield to investors, in fact gave no cash return at all. Interest on these instruments is paid in kind, that is, by issuing further bonds to cover the interest. Thus an investor buying £1 million of such bonds could after a few years end up being owed £2 million. Such a policy
works only if the company can ultimately afford to repay the capital due. Because the interest is not being paid out, they are inherently more risky than equivalent bonds which give a regular yield and so should carry a greater interest rate.

Payment in kind (PIK) bonds have become increasingly popular in recent years, used particularly in private equity transactions.

**MEZZANINE DEBT**

*Downside protection: may be a charge over assets; covenants*

*Yield: interest*

*Upside potential: equity kicker on redemption*

We once heard mezzanine described by a banker as ‘what we issue when we can’t afford to lend any more, but the company can still afford to borrow’. By this, he meant that the borrowing company had exhausted all the ‘good’ security, and its financial gearing ratios were higher than a risk-averse lender would live with comfortably, but it was accepted that the company’s cash flow and growth prospects merited further borrowing.

Mezzanine can carry covenants, although these might not be very useful, as they would not take precedence over senior covenants. Accordingly, mezzanine debt is higher risk than senior, and thus attracts a higher return. As it would normally be infeasible for the loan to carry a rate of interest high enough to compensate for the lender’s risk, in addition to the interest a mezzanine loan will often carry *warrants* (see below). Thus the return on mezzanine will be a mixture of interest yield and potential capital gain.

An example of a mezzanine loan is as follows. MezzCo wishes to borrow £10 million for 7 years, and has exhausted all of its ‘normal’ debt capacity. A specialist mezzanine provider (which might be a finance house that writes only mezzanine, or could be the mezzanine arm of a bank) will lend the money. The deal is structured such that the loan bears interest at, say, LIBOR plus 3% over the life of the loan. At the end of the 7 years the full loan will be repaid, and the lender will also have warrants giving the right to buy say 2% of the company’s share capital, at say 1 p per share. This gives the lender a running yield, and enhances the return with the possibility of a capital gain on redemption.

Mezzanine is a private transaction rather than one which is traded on the financial markets.

**CONVERTIBLE DEBT**

*Downside protection: may be a charge over assets; may be covenants*

*Yield: interest*

*Upside potential: opportunity to convert into equity*

This is debt which is convertible into equity (generally ordinary shares). The advantage of this to the lender is that there is a chance to participate in the share

---

4 One of your authors managed an investment in a mezzanine loan to a company which had been in breach of the mezzanine covenants for 2 years. However, the senior loan covenants had not been breached, and so the mezzanine lenders were powerless to enforce their position. They merely noted in the files, on a monthly basis, that the covenants were in breach!
capital of the company, and so to make a capital gain. Because of this, the interest rate on convertibles is lower than that on non-convertible debt.

To give an example of convertible debt, consider ConCo. ConCo is currently trading at a share price of £1 per share. The directors wish to raise £10 million capital, and have considered their alternatives: issue new equity, raise debt, or issue a convertible. They are reluctant to issue new equity, as they can foresee the share price rising considerably in the near term, and feel that issuing equity now, at only £1, would be an unnecessary dilution for their existing shareholders. Furthermore, they realize that issuing £10 million of equity now would substantially change the voting structure of the company’s shares, and they would like to maintain their controlling position for as long as possible.

ConCo has also considered issuing straight debt. The problem with this is that the company’s existing lenders would not permit further senior debt to be issued, as this would damage their own position. Anyway, ConCo is already paying out large sums in quarterly interest charges, and taking on further debt would only exacerbate that cash outflow from the company.

Accordingly, ConCo determines that it will issue convertible debt. The terms of the debt are as follows:

- Outstanding for 10 years.
- Carries interest at LIBOR plus 1%.
- Carries conversion rights into ordinary shares at £2 per share.

This means that the holders of the debt will earn a running yield of LIBOR plus 1% (not a large amount, considering the risk they must be taking) over the 10 years of the loan. At the end of the 10 years, they have a call option – the choice either to be repaid their £10 million, or to convert it into shares in ConCo at £2 : 5 million shares. Obviously, the lenders hope that shares in ConCo will be trading at considerably more than £2 in 10 years’ time. If the shares are trading at, say, £3, the lenders will undertake the conversion, and can immediately sell their 5 million shares for £15 million, making a capital gain of £5 million. The capital gain boosts the return, making it more commensurate with the risk being taken. Working insight 12.2 sets out an example of the returns, and the level of growth the investor might require.

From the issuing company’s point of view, convertibles have many advantages, as follows.

- Issuing convertibles rather than equity avoids issuing shares at the current price. This avoids the immediate dilution of eps, and also retains voting rights in their existing proportions for a while longer.
- Issuing convertibles rather than equity means that the eventual issue of equity (the conversion) will take place at a higher share price in the future, benefiting existing shareholders as it will dilute them less.
- Issuing convertibles instead of debt means that the ongoing servicing of the instrument (interest payments) is lower, thus conserving the company’s cash resources and improving its reported profitability.
- Convertibles represent self-liquidating debt, in that – if all goes according to plan – the debt will never need to be repaid but will be converted into equity instead, thus preserving resources in the company.
ConCo: Returns from convertibles

ConCo has borrowed £10 million on a 10 year convertible carrying interest at LIBOR plus 1%. LIBOR is currently 5%. The conversion price is £2, which compares to today’s share price of £1.

The cash flows to the investor are:

<table>
<thead>
<tr>
<th>£000</th>
<th>Year 0</th>
<th>Years 1–9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial investment</td>
<td>(10,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield</td>
<td></td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Redemption/sale of shares</td>
<td></td>
<td></td>
<td>≡10 000</td>
</tr>
</tbody>
</table>

If the shares are trading at less than £2 in Year 10, the investor will demand repayment of the £10 million, otherwise, they will convert. The overall return obtainable depends on the growth in the share price over the period, as shown below.

<table>
<thead>
<tr>
<th>Annual growth in share price (%)</th>
<th>Share price in year 10 (£)</th>
<th>Value of 5 million shares (£'000)</th>
<th>Overall compound return on investment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>2.16</td>
<td>10,795</td>
<td>6.6</td>
</tr>
<tr>
<td>9</td>
<td>2.37</td>
<td>11,837</td>
<td>7.3</td>
</tr>
<tr>
<td>10</td>
<td>2.59</td>
<td>12,969</td>
<td>8.0</td>
</tr>
<tr>
<td>11</td>
<td>2.84</td>
<td>14,197</td>
<td>8.8</td>
</tr>
<tr>
<td>12</td>
<td>3.11</td>
<td>15,529</td>
<td>9.5</td>
</tr>
<tr>
<td>13</td>
<td>3.39</td>
<td>16,973</td>
<td>10.3</td>
</tr>
<tr>
<td>14</td>
<td>3.71</td>
<td>18,536</td>
<td>11.1</td>
</tr>
<tr>
<td>15</td>
<td>4.05</td>
<td>20,228</td>
<td>11.9</td>
</tr>
</tbody>
</table>

Thus, if the investor requires a return of, say, 10%, they should only invest in this convertible if they believe that the share price will increase by more than 13% compound over the 10 years. (A check for reasonableness of this could be done by looking to the PVGO and the growth inherent in the current share price, as discussed in Chapter 2.)

Convertibles seem at first sight to give the best of both worlds – they free the company from having to sell equity cheaply, and they give the lender some downside protection so that even if the share price does not rise, the investment can still be repaid. There is of course a catch – in finance there is no free lunch. If ConCo’s shares are still trading at £1 in 10 years’ time, then the convertibles will not be converted. In this case, the lender will have effectively lent the money to
the company at LIBOR plus 1% – a return that in no way reflects the risk taken. Furthermore, if the shares are only trading at £1 in 10 years’ time, it implies that the company is not trading to expectations; indeed, it could be facing trading problems. Having to repay £10 million unexpectedly (because it was assumed that the holders would convert rather than ask for repayment) might be difficult.

If things do go according to plan, the convertibles will be converted and the company will never have to find the £10 million for the payout. This expectation that they will be self-liquidating led to companies treating convertibles as equity in their balance sheets when the instruments first became common, in the 1980s. The view taken was that as the capital would never need to be repaid, it was equity rather than debt. However, the accounting standards bodies took a different view, arguing, very reasonably, that there is a potential liability unless and until the conversion option is selected. Accordingly, until recently the instruments were shown on companies’ balance sheets as debt, and the ultimate dilution should they be converted was noted.

This accounting treatment was changed with the general adoption of IFRS. The required treatment is now that the convertible be treated as two separate instruments: a liability, included in the financial statements at ‘fair value’ (based on the interest rate that would be charged if it were ‘normal’ debt), and the balance (effectively the value of the option to convert) treated as equity. This has made the use of convertibles less attractive for some companies.

Appendix 2 explains how convertibles are valued, and more about how they are structured.

EXCHANGEABLE BONDS

Downside protection: may be charge over assets, may be covenants
Yield: interest
Upside potential: opportunity to convert into the equity of another company

Exchangeables are very similar to convertibles, in that the lender has the right to repayment or to convert into another asset. The difference is that the assets into which conversion is offered are not the securities of the company issuing the bonds, but the assets of a related company. This can have several advantages for the issuing company, including limiting the dilution of its own shareholders, and enabling it to offload investments that it no longer wishes to hold.

For example, in October 2007 KCC Corporation, a Korean construction materials company, announced that it had raised $1 billion by selling a bond that was exchangeable in three tranches. Two parts of the bond were to be exchanged for shares of Hyundai Merchant Marine (HMM) and of Hyundai Heavy Industries (HHI). KCC owns investments in both of these companies, and these investments will provide the shares for the ultimate exchange. The third tranche of the exchange is more like a normal convertible, being into treasury shares of KCC itself.\

5 Source: FinanceAsia.com
SUBORDINATED DEBT

*Downside protection: probably none*

*Yield: interest*

*Upside potential: none*

As its name implies, this debt is subordinated to the claims of other creditors. Because it is riskier, it should carry a higher interest rate.\(^6\)

One particular example of subordinated debt is Hybrid Bonds. These have very long maturities: for example, the subordinated hybrid issued by Henkel, the German multinational. Case study 12.3 sets out the terms of this bond, as an example of such an instrument.

PREFERENCE SHARES

*Downside protection: minimal*

*Yield: fixed dividend*

*Upside potential: none*

Preference shares are a type of quasi-equity – they do not give a right of ownership of the company and do not normally give a capital gain. Their main feature is that they carry a fixed dividend, which takes precedence over the dividend paid on ordinary shares. The dividend is often cumulative: if it is unpaid in any year, the arrears are carried over to be paid in future years. Although the shares do not normally carry votes, it is often the case that they will carry a vote if, and for as long as, their dividend is in arrears.

The ‘preference’ in the title also refers to the fact that in a winding-up these shares get paid out before the ordinary shares. (This gives a marginal reduction in risk compared to the ordinary shares, but nothing to get excited about.)

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### 12.3 HENKEL: THE 99 YEAR BOND

- Raised €1.3 billion.\(^7\)
- Issued in 2005, and maturing in 2104 (99-year term). However, the investors’ risk is mitigated slightly by the fact that the bond is redeemable after 10 years.
- Interest is at 5.375% for the first 10 years, and then at 3-month EURIBOR plus a premium of 2.85%.
- The bond is subordinated, and Henkel has the option to defer interest payments under certain specified circumstances, relating to a fall in its cash flows.

As would be expected given the risk, these interest rates represent a premium over the prices being paid for more normal medium-term bonds at the time.

*Source: www.henkel.com*

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\(^6\) However, subordinated debt is sometimes lent by the owners of the business, or the previous owners in order to facilitate a buyout, in which case the coupon might not fully reflect the commercial risk.

\(^7\) Interestingly, and related to the earlier discussion on accounting treatments, Henkel notes in its financial statements that its debt ratios are flattered by the fact that the hybrid is treated partly as equity.
Preference shares may be redeemable at the direction of the company, in which case the redemption is normally at par: as stated above, there is no right to a capital gain. However, preference shareholders may be able to make a capital gain if the shares are traded on the market, and market interest rates have changed significantly since the shares were issued. For example, a £1 12% preference share carries an annual dividend of 12 p. If market rates reduce to 6%, the value of the share in the market could rise to £2.

Instead of being repayable or redeemable, or in addition to those possibilities, some preference shares may carry a right to conversion into equity, similar to convertible debt.

**ORDINARY SHARES**

*Downside protection: none*

*Yield: dividends*

*Upside potential: unlimited*

The holders of the ordinary shares are the ultimate owners of the company. They are entitled to all of the profits (after the other sources of finance have received their interest or dividends). This is the true risk capital of the company. In the event of a liquidation, the ordinary shareholders are the last to be paid out.

**WARRANTS**

*Downside protection: none*

*Yield: none*

*Upside potential: opportunity to acquire the company’s equity*

Warrants are financial instruments issued by a company in its own shares. Ownership of a warrant gives the holder the right to acquire shares in the company on or after a certain date, at a certain price (which, it is hoped, will be less than the then market price). In this, they are similar to call options.

**OPTIONS**

*Downside protection: none*

*Yield: none*

*Upside potential: opportunity to acquire the company’s equity (call option) or to sell it (put option)*

As explained in Appendix 2, an option gives the holder the right to do something, but not the obligation to do it. The buyer of options may do so to hedge against a risk, or to speculate. The seller of options is taking a significant risk, as the price of the underlying assets may move out of line with expectations. The difference between options and warrants is that whereas warrants are issued by the company in question, any third party can write options over any company’s securities.
In the beginning there were ‘debt’ and ‘equity’. However, the capital markets have long since diversified their financial instruments, and the continuum shown in Figure 12.1 illustrates that there are many choices in financing a company. When selecting or evaluating a source of finance there are several important things to remember.

- Keep it simple. If it is possible to structure the deal using ‘plain vanilla’ debt or equity, this is probably the best thing to do. Generally, fancy financial structures mostly benefit the investment banks who sell them (or the academicians who write about them).
- The financial instrument chosen should have a risk profile to complement the company’s business risk profile. Companies with low business risk can afford to take on high-risk debt instruments, to lower their average cost of capital. High-risk companies are best to stick to equity instruments.
- Cash requirements and profitability will also affect the choice of instrument.
- The accounting treatment of financial instruments may not be a good indicator of the true situation. Use option theory to help classify the instrument.
- The continuum of financial instruments indicates that there is no single definition of ‘gearing’. The gearing of a company is the relationship between its debt and its equity; the continuum shows that there are few absolutes, but a lot of grey areas. When calculating gearing, always do it from the point of view of a particular security: other securities to the left of it in the continuum count as ‘debt’ as far as it is concerned, as they have better rights against the company’s assets. Securities to the right on the continuum line have fewer rights, and can be treated as equity.

### KEY TERMS USED IN THIS CHAPTER

- Call option
- Convertibles
- Coupon
- Covenants
- Cov-lite
- Cumulative
- Exchangeable bonds
- High-yield bonds
- Hire purchase
- Junior debt
- Junk bonds
- Leasing
- Mezzanine
- Options
- Ordinary shares
- PIK (payment in kind)
- Preference shares
- Put option
- Redeemable
- Repayment terms
- Risk–return continuum
- Sale and leaseback
- Secured debt
- Securitization
- Senior debt
- Special purpose vehicle (SPV)
- Structured finance
- Subordinated debt
- Unsecured debt
- Warrants
Dividends and buybacks

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In Part 2 of this book we examined the various dividend strategies appropriate for companies at different stages in the life cycle. In this chapter we bring together those thoughts on dividend strategy, and supplement them with consideration of alternatives to dividends, such as share repurchases or buybacks. We also examine some of the theories behind dividend payment.

SUMMARY OF THE DIVIDEND COMPONENT OF THE OVERALL MODEL

We have established that the payment of dividends is constrained by two main factors: ability to afford the cash outflow from the company, and existence of distributable profits. In terms of the financial model developed in Chapter 4, this translates into dividend strategy as shown in Working insight 13.1.

### Working Insight 13.1

<table>
<thead>
<tr>
<th>Life Cycle</th>
<th>Cash availability</th>
<th>Profit availability</th>
<th>Dividend policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch</td>
<td>No spare cash available All cash is needed for investment in developing the business</td>
<td>None. Probably making losses</td>
<td>Nil dividend payout</td>
</tr>
<tr>
<td>Growth</td>
<td>Cash is needed for development and investment in growing market share</td>
<td>May be profitable</td>
<td>Nil dividend payout is preferable. However, new shareholders might prefer a nominal payout</td>
</tr>
<tr>
<td>Maturity</td>
<td>The company is now cash positive and has fewer opportunities to invest in profitable growth</td>
<td>Profitable</td>
<td>A medium to high dividend payout is preferred</td>
</tr>
<tr>
<td>Decline</td>
<td>The company is cash positive, with no reinvestment potential</td>
<td>May be profitable</td>
<td>Full payout of available cash as dividend, even in excess of current profits</td>
</tr>
</tbody>
</table>
Appendix 1 shows how Modigliani and Miller took the view that, in the perfect world in which their theories were developed, dividends are an irrelevance. Paying dividends reduces the overall size of the company, thus decreasing the value per share in direct proportion to the dividends received. Shareholders could choose to sell shares in order to realize funds, and do not need the declaration of a dividend to facilitate this.

However, Modigliani and Miller based their work on a world in which both taxes and transaction costs were ignored. In the real world, dividends are not irrelevant. Before we look at the ways in which they are paid, let us consider just some of the reasons suggested for why they are paid in the way they are.

An argument has been advanced that companies’ dividend policies are influenced considerably by the tax systems – both corporate and personal – under which they operate. This seems plausible, in that shareholders might prefer to receive capital gains, taxed at a low rate, rather than dividends which are taxed highly. Furthermore, investors can choose when to trigger a capital gain by selling shares; they do not have a choice about paying tax on dividends so this too is an argument in favour of dividend policies being influenced by tax issues. However, research provides only moderate support for this as a standalone theory: for example, if this were truly the case companies in regimes which tax dividends more highly than gains would never pay dividends: this is not the case.

(However, it is notable that Microsoft, extremely profitable and having over $40 billion of surplus cash, only announced its first dividend in 2003, once US tax laws were revised. The new laws exempted shareholders from income tax on dividends received from tax-paying corporations.)

A case is also made for dividends as a manifestation of agency theory. If a company has surplus cash, the management effectively has three choices as to how to deal with this: it can invest it in positive net present value projects (in which case, the cash is not really surplus); it can waste it on negative net present value projects; or it can distribute it back to the shareholders. Companies that sit on mountains of cash tend to make the investing community quite nervous, as there is always the danger that it will be misused. Therefore, giving it to the shareholders as a dividend is seen as a positive sign of good corporate governance. If surplus cash is repaid, then when the directors need additional funding in order to invest in new projects there is an automatic vetting mechanism, in that either lenders or shareholders will have to be convinced of the power of their investment proposal.

Perhaps the strongest argument about how companies pay dividends, and one that relates directly to the theories propounded in this book, is that dividends are seen as a signalling mechanism to the market. Here, changes in dividend levels are seen as far more important than the actual dividends themselves. It is undoubtedly true that changes in dividends carry a signalling effect—any cursory reading of the financial press for a few weeks will demonstrate this. However, as Working insight 13.2 illustrates, reading those signals may be somewhat complex.

Generally, boards are reluctant to change their dividend policy without good cause. However, although some companies maintain a reasonably constant
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dividend payout ratio, many do not. Companies rarely change dividends exactly in line with changes in profits: one bad year could lead to a fall in dividends, with disastrous results for market sentiment. Particularly for companies in cyclical industries, a dividend payout policy that reflected a constant payout percentage would lead, over the cycle, to a level of dividend that varied considerably. This is not what shareholders have come to expect. For such businesses, it may be more appropriate to vary the dividend cover but maintain (or smoothly increase) the level of dividend. This would just be a different way of managing shareholders’ expectations. Working insight 13.3 demonstrates how this might work in a company suffering changed profitability.

The smoothed dividend policy illustrated in Working insight 13.3 reflects merely increasing annual dividends by 15% each year, a figure which management believes will be well covered by forecast profits for the next few years. In Year 5 this leads to a dividend payout which reduces dividend cover below 2 times: this continued increase in dividend payments would (they hope) be seen by the financial markets as a signal of their continued confidence in the company’s prospects, and their belief that the fall in profits in Year 5 was a ‘blip’ in a growing trend.

(The smoothed dividend policy in Working insight 13.3 was determined on a totally arbitrary basis by the authors. In Appendix 1 we discuss the research of Lintner in 1956, who concluded that companies actually apply an adjustment factor to their target payout ratio each year, to allow for such smoothing. Lintner’s work was ground-breaking in its time, and a useful development of

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**What does a dividend change signal?**

<table>
<thead>
<tr>
<th>Interpretation</th>
<th>Increase the dividend level</th>
<th>Decrease the dividend level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good news</td>
<td>The company is prospering, and we can afford to pay out more of our profits without damaging our prospects</td>
<td>The company has changed its strategy and the directors see these very profitable investment opportunities, which will provide more shareholder value than will mere payment of dividends</td>
</tr>
<tr>
<td>Bad news</td>
<td>The directors have run out of ideas for profitable growth</td>
<td>Profits and cash flow are way down, and the company is facing trouble for the foreseeable future</td>
</tr>
</tbody>
</table>

The model suggested in this book indicates that increasing the dividend level could be seen as a signal of advancing one stage in the life cycle. The model suggested in this book indicates that decreasing the dividend level could be seen as a signal of moving back one stage in the life cycle.
theory. However, your authors’ practical experience with finance directors and boards indicates that the dividend decision is often made on pretty unscientific ground – the main criterion being ‘a bit more than last year’!

In recent years, institutional investors have pressed for companies to increase their dividend payouts. This has partly been for the agency reasons suggested above, and partly to encourage companies to increase their gearing, creating value through financial engineering (although the share buybacks discussed below might be a better way to effect such regearing). Of course, we must point out that this value creation only takes place if the company is suitable for high leverage; if not, then it will make the investment more risky without necessarily increasing value proportionately. Although such financial engineering often provides benefits for private equity companies (see Chapter 17), such companies have close management contact with their investments, and are able to act quickly if things appear to be going wrong. For a publicly listed company shareholders do not have this insight, so may be taking on the gearing risk without having access to appropriate mitigation strategies.

### STOCK DIVIDENDS

There is another way of paying dividends, in which the company declares a dividend but does not actually pay out any cash. This is normally known as a stock dividend or scrip dividend, and many companies give their shareholders the option to take their dividends either in cash or in the form of new shares.

In some jurisdictions there can be an advantage in stock dividends for the corporate shareholder, as the stock dividend may not be not charged to tax.
When shareholders are offered stock dividends, it is always possible for those investors who want to receive cash to sell these new shares in the markets to realize the cash equivalent of their dividend. This is the same argument as used in theory to justify indifference of shareholders to the dividend policy of the company, and hits the same problem of transaction costs.

One perceived advantage of the stock dividend is that it enables shareholders to increase their holdings without incurring dealing costs. This, of course, is only valid if some of the shareholders sell their shares, or elect to receive a cash dividend; otherwise, all that happens is each shareholder’s absolute holding increases, but their percentage holdings remain the same. Theoretically a straightforward stock dividend is the same as a bonus share issue; the company is simply capitalizing part of its distributable profits in order to issue new free shares. If the shareholder can choose between a cash dividend and being given more shares, the alternative stock dividend can be seen as a rights issue, with the exercise price being the total dividend divided by the number of shares offered.

A company declaring a stock dividend is effectively retaining the cash in the business for reinvestment. The critical question for shareholders therefore is whether the expected return on that increased reinvestment is financially attractive, so that it increases the total value of the company. From this perspective it can be seen that the declaration of a stock dividend is completely irrelevant – no cash is leaving the company. If stock dividends do not affect the company’s reinvestment strategy, they are not part of the real dividend policy of the company.

**SHARE REPURCHASES (BUYBACKS)**

Paying dividends is a logical way of distributing cash to investors if that cash is no longer required by the company. However another way of effectively achieving the same aim is for the company to repurchase some of its own shares using its excess cash to finance the purchase. The repurchased shares are held in the balance sheet as ‘treasury stock’, and can later be reissued, at an appropriate market price.

This is an area where the legal and tax positions vary by country. Some countries allow share repurchase, others still do not permit it, or impose severe tax penalties if it is undertaken. Such tax penalties differ from the US situation, where buybacks have a tax advantage over dividend payment, or other regimes, which are broadly neutral between buybacks and dividends.

When looked at in terms of the real impact, a share repurchase scheme should be regarded as a one-off discretionary dividend offer to shareholders. Thus, as shown arithmetically in Working insight 13.4, if all shareholders accept the repurchase offer pro-rata to their shareholdings, they will own the same proportion of the company after the repurchase but will have received a cash payment from the company. This sounds remarkably like a dividend payment! If any particular shareholders do not want to receive cash at this time, they do not need to sell any of their shares. Their proportionate shareholdings will increase to compensate for the non-receipt of the cash payment: whether the compensation is inadequate or excessive depends on the reaction of the share price to the news of the repurchase.
The market reaction to the repurchase should be conditioned by the appropriate dividend policy for the company and whether this repurchase can be logically explained in this context. For example, if a mature company disposes of one of its business units it may have no need of the large cash balance it receives as a result. It could pay this cash out as a dividend but this level of dividend would be unsustainable in the future. Confusion among shareholders could be avoided by clear communication of the extra payment as a bonus, one-off dividend, stating the source of the cash inflow.

Alternatively the company could use the cash to repurchase some of its own shares in the market, thus indirectly paying a bonus dividend to those of its shareholders who choose to sell shares at this time. There is an accounting impact of repurchasing shares which can make it appear more attractive to some companies than the straightforward higher dividend payment. This is that share repurchase can be used to increase earnings per share (eps), whereas they will actually be reduced by the higher dividend payment\(^1\). As illustrated in Working insight 13.5 this increase is achieved for companies with relatively low-price/earnings (P/E) multiples, which tend to be mature cash-positive businesses where high dividend payout ratios are appropriate.

In a perfectly efficient market, the share price should not be affected merely by changes in eps unless these changes reflect real alterations in future cash flow. The distribution of cash now, whether in the form of dividends or share repurchase, should have the same impact on the company’s future cash generation capability; this assumes that there are no differences in the tax treatment of the two cash distributions. Consequently the total value of the company should be the same,

\[ \frac{9 \text{ million}}{450 \text{ million}} = \frac{10 \text{ million}}{500 \text{ million}} \]

\(5\) The higher dividend payment will reduce the company’s cash resources; if nothing else, profits will be reduced because the company is not earning interest on its deposits.
### Impact of share repurchases on eps

Extracts of the latest profit and loss account of Mega Cash Holdings plc are

<table>
<thead>
<tr>
<th></th>
<th>£millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit</td>
<td>130</td>
</tr>
<tr>
<td>Interest income</td>
<td>20</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>150</td>
</tr>
<tr>
<td>Taxation</td>
<td>50</td>
</tr>
<tr>
<td>Profit after tax</td>
<td>100</td>
</tr>
<tr>
<td>Dividends paid</td>
<td>50</td>
</tr>
<tr>
<td>Retained profits</td>
<td>50</td>
</tr>
</tbody>
</table>

The company has 500 million issued shares, so that the eps are 20 p (profit after tax of £100 million divided by 500 million shares). The current share price is £2, representing a P/E multiple of 10. The interest income of £20 million is generated by the investment of a cash mountain totalling £400 million at a pre-tax interest rate of 5%.

The company wishes to assess the impact on eps of using the cash mountain either to pay a one-off extra dividend or to repurchase 200 million shares (no change in share price is assumed as a result of the share repurchase and operating income and effective tax rates are kept the same).

<table>
<thead>
<tr>
<th></th>
<th>Impact of dividend</th>
<th>Impact of share buyback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td>Taxation</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Profit after tax</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Dividends</td>
<td>443</td>
<td>43</td>
</tr>
<tr>
<td>Retained profit</td>
<td>356</td>
<td>44</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>17.4 p</td>
<td>29 p</td>
</tr>
<tr>
<td>No. of shares</td>
<td>500 million</td>
<td>300 million</td>
</tr>
</tbody>
</table>

*Note:* The use of the cash mountain removes the interest income from the profit and loss account thus reducing eps in the dividend payment case.

which leads to a difference in share price since after the share repurchase there are fewer issued shares remaining. This difference in share price means that the P/E multiple applied to the company should still be the same in both cases, as is shown in Working insight 13.6.

It is quite possible to generalize the conditions under which share repurchases will increase eps, as is explained in Working insight 13.7 but, as mentioned above, this should theoretically have no impact on the share price.
Impact of share repurchases on share price and price/earnings multiple

It is assumed that the original market capitalization (£1 billion) of Mega Cash Holdings plc valued the cash mountain at its face value of £400 million. This implies that the after-tax trading profits of the company of £87 million are capitalized at a P/E multiple of 6.9; so that

\[
\begin{align*}
\text{PAT (exc. interest income)} & \quad £87\text{ million} \\
\text{multiplied at implied P/E of} & \quad 6.9 \\
\text{gives market value of} & \quad £600\text{ million} \\
\text{plus face value of cash} & \quad £400\text{ million} \\
\text{Market capitalization of company} & \quad £1,000\text{ million}
\end{align*}
\]

After the cash distribution, this market capitalization should therefore fall to £600 million (ignoring the tax impacts).

<table>
<thead>
<tr>
<th>Dividend distribution</th>
<th>Share repurchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market capitalization</td>
<td>£600 million</td>
</tr>
<tr>
<td>Issued shares</td>
<td>500 million</td>
</tr>
<tr>
<td>Resulting share price</td>
<td>£1.20*</td>
</tr>
<tr>
<td>eps (from Working insight 13.5)</td>
<td>17.4 p</td>
</tr>
<tr>
<td>P/E multiple</td>
<td>6.9</td>
</tr>
</tbody>
</table>

*The share price falls after the dividend payment, because this cash payment represents 80 p per share (ignoring the tax impact).

Assessing the impact of share repurchase on eps

Let

\[
\begin{align*}
N & = \text{number of shares in issue} \\
n & = \text{number to be repurchased} \\
p & = \text{price of shares to be bought} \\
K_d & = \text{bank interest rate on money borrowed (or not earned) for repurchase} \\
t & = \text{tax rate (corporate)} \\
\text{PAT} & = \text{profits after tax before the share repurchase}
\end{align*}
\]

Then,

\[
\text{eps} = \frac{\text{PAT}}{N}
\]

and after the buyback

\[
\text{new eps} = \frac{\text{PAT} - npK_d(1 - t)}{(N - n)}
\]
The ‘rule’ on the eps impact of buybacks set out in Working insight 13.7 is illustrated in Working insight 13.8.

Over the last decade, stock repurchases have become more popular with companies. One reason for this is that previously they were illegal or tax-inefficient in many countries: now these restrictions have been lifted. But many other reasons have been given for the explosion in companies buying back their own shares rather than paying dividends. Working insight 13.9 sets out many of these, some of which have more face validity than others.

In Working insight 13.9, one of the reasons often declared for undertaking share buybacks rather than declaring dividends is that buybacks are more flexible than dividends and do not give rise to a shareholder expectation of future activity. However, shareholders are generally intelligent, capable of understanding that special one-off dividends will not be repeated every year. For example, in July 2007 Capita Group, a UK-based outsourcing company, announced

---

**Assessing the impact of share repurchase on eps (Continued)**

If eps is to be enhanced by the transaction, \( \text{eps} < \text{new eps} \)

that is,

\[
\frac{\text{PAT}}{\text{N}} < \frac{\text{PAT} - \text{npK}_d(1 - t)}{(\text{N} - \text{n})}
\]  

(13.1)

Equation 13.1 can be simplified down to:

\[
\text{PAT} > \text{npK}_d(1 - t) \\
\text{PAT}/\text{N} > \text{pK}_d(1 - t) \\
\text{that is, eps} > \text{pK}_d(1 - t)
\]  

(13.2)

that is, share price paid for the repurchase, \( p < \text{eps}/\text{K}_d(1 - t) \)  

(13.3)

If the share price paid is greater than this, eps will be diluted; if the price paid is less than calculated by equation (13.3), eps will be enhanced.

Restating equation 13.3 we can see that at equilibrium (i.e. where new and old eps are the same)

\[
\text{eps} = \text{share price paid} \times \text{after-tax cost of debt}
\]

This shows that eps is reduced by interest on the amount borrowed for the repurchase. So if interest rates are high, or the price paid is high, eps may not be boosted.

BUT – if the directors believe that profit is going to rise in the future, it will be worth the eps effect as eps will rise even more for the fewer shares that are left.

This is the same as:

\[
\frac{\text{p}}{\text{eps}} < 1/\text{K}_d(1 - t)
\]  

(13.4)

Eps will be enhanced if the P/E multiple of the company is less than the inverse of the post-tax opportunity cost of funding used to repurchase the shares.
Impact of share repurchase on eps

In Working insight 13.5 we showed the impact of a buyback on Mega Cash Holdings. Mega was receiving interest on its cash mountain of 5% before tax, 3.35% after tax. Its shares were trading on a P/E of 10 times.

Using equation (13.4) derived in Working insight 13.7, the share repurchase will increase eps provided that the P/E multiple of the buyback is less than the inverse of the post-tax opportunity cost of funding used to repurchase the shares, that is,

\[ P/E < \frac{1}{K_d(1 - t)} \]

For Mega, the buyback was done at the then-current market value, that is, at a P/E of 10 times. Provided that the post-tax cost of funds was below 10%, the buyback will enhance eps. As shown in Working insight 13.5, the buyback did indeed have this effect.

In the unlikely event that the company had used its surplus £400 million to buy back 66.7 million shares at £6 a P/E of 30 times (the inverse of the 3.35% debt cost), there would have been no impact on eps, as shown below.

<table>
<thead>
<tr>
<th></th>
<th>Before £million</th>
<th>After £million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td>Interest income</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>150</td>
<td>130</td>
</tr>
<tr>
<td>Tax</td>
<td>50</td>
<td>43</td>
</tr>
<tr>
<td>Profit after tax</td>
<td>100</td>
<td>87</td>
</tr>
<tr>
<td>Number of shares</td>
<td>500 million</td>
<td>433.3 million</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>20 pence</td>
<td>20 pence</td>
</tr>
</tbody>
</table>

Reasons for companies to repurchase their own shares

**Reasons which apply only to share repurchases**

- To increase eps (as demonstrated in Working insight 13.7).
- To strengthen management incentives by reducing the number of outstanding shares so that management ends up with a higher percentage of the company. *(Note: this obviously can lead to agency conflicts.)*
- Buybacks are considered to be more flexible than dividends, as they are seen as one-offs and do not reflect a trend. *(But see note below.)*
- To buy out ‘weaker’ shareholders who may otherwise sell to a hostile bidder. *(Again, note the potential agency conflict.)*
- To give shareholders a choice of how to take their return.
- To offset eps dilution from the exercise of share options.

**Reasons which would apply equally to dividend payments**

- To improve management’s business focus by limiting their opportunities to invest in non-core or value-reducing projects.
- To reduce the cost of capital.
a special one-off dividend of 25 p per share in order to return surplus cash to shareholders. (The total dividend in the previous year was 9 p per share.) This was the first time the company had issued a special dividend; previous capital returns had been done as buybacks. The reason for this change in tactics was that the share price had risen a lot, meaning that purchase of own shares was an unattractive proposition on value terms.

An example of the great flexibility a company can create when returning cash to shareholders was shown by Emap, the UK media group, which effectively gave them a choice between a dividend and a share repurchase, as set out in Case study 13.1.

### DO BUYBACKS ADD VALUE?

Given that share buybacks have become common, what is the market impact of a company’s announcement that it is about to undertake such a transaction? Well, as with dividends the signalling effect may vary. Generally, markets seem in favour of buybacks, as they eliminate the ‘slack’ for directors, and often the company’s share price rises disproportionately. However, as with dividend increases, if the market believes that the directors are proposing a buyback because they have run out of investment ideas, the negative impact could damage sentiment about the company’s future.

(What is interesting about this is that many companies appear to announce share buybacks without actually undertaking them. This way they get the flexibility of financial choice, and benefit of the positive market sentiment without all the messiness of losing control of the company’s funds! However, this does mean that often the market treats more seriously a formal purchase plan than just a vaguely expressed intent to buy back shares on the market.)
Of course, in the final analysis share buybacks only add value for the shareholders if they can be achieved at a buying price below the fundamental value of the company. Buying back shares which are overpriced by the market – however it affects the eps or market sentiment – is not a value-enhancing strategy.

**THE MECHANICS OF A BUYBACK**

The practicalities of repurchasing shares are more complex than those for declaring a dividend (which means of course that significant fees may be paid to investment banks and advisers, in turn implying that the company has to be very certain that this is a route it wishes to follow). The regulations will differ in each country.

The buyback decision, because of its ‘one-off’ nature, is more complicated than the dividend decision. As we have stated, with dividends the question to ask is generally ‘how much more than last year should we pay?’. With buybacks the two key issues to be addressed are:

1. How much can the company afford to repurchase? Issues to consider are whether or not there is surplus cash in the business; the impact on the company’s debt:equity ratio of a buyback; and whether available reserves will permit the desired level of buyback.
2. Is it the intention to give all shareholders an equal chance of selling their shares to the company? This will impact the method by which the buyback is undertaken, as discussed below.

**METHODS OF REPURCHASE OF SHARES**

In the UK, provided that a company has met with legal requirements such as having sufficient reserves and obtaining shareholder approval for the transaction, there are two main ways in which it can repurchase its shares: buying them on the stock market, and a tender offer. The former is the most common method: buying shares on the market is relatively quick and straightforward, and the company can choose when to make the purchase\(^2\). For repurchases of relatively small amount of shares – say 2–3% of the outstanding capital – this is an effective way to proceed.

If the company wishes to buy back a higher volume of its shares, or if it wishes to make an offer to all of its shareholders, not just those who are active in the stock market, then a tender offer is better. In a tender offer the directors state a price at which they will repurchase the shares, and advertise this widely to shareholders. In many ways the process is the same as that for issuing shares on a market.

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\(^2\) Logically, companies would only buy back their shares on the market if they believed that the shares were undervalued. That would mean that shareholders who wished to stay with the company would benefit, and those who thought the current price fair would be able to exit. However, as most listed company directors seem permanently to regard the market as underpricing their shares (even at the height of a boom) this analysis may be overly academic.
CONCLUSION

Companies can in some circumstances create value for shareholders by returning money to them. They may choose to return cash to shareholders in two main ways – by paying dividends or by entering into share buyback arrangements. Although in many instances the position for the shareholders is the same – they receive a cash payment – the signalling effect by the company can be very different, as can the impact on its financial results. Accordingly, the decision as to how to give the shareholders their return is one that is closely linked to the company’s position and future strategy.

KEY MESSAGES

- Dividends and share buybacks both involve giving cash to the shareholders.
- The level of dividend payout should increase over the company’s life cycle, with payments increasing as the company matures and has more cash and profits available.
- Various theoretical arguments are advanced to explain dividend policy. These include tax reasons; protecting surplus cash from poor management decisions; and as a signalling mechanism to the market.
- Buybacks may be undertaken for these reasons, and also to increase eps or change the relative holdings of shareholders. Buybacks are also commonly used to regear a company, reducing the overall cost of capital.
- Companies are reluctant to reduce dividends year-on-year, even over the economic cycle.
- Dividends paid by issuing more shares, rather than being paid in cash, may have advantages in some circumstances.
- A share buyback is a good way to return cash to shareholders whilst not raising expectations of future dividends. It may also carry tax advantages.
- The signal given by increasing dividends or organizing a buyback can suggest that the company expects to have growing profits and cash flow, and so can spare the extra money. Or it can suggest that the company has run out of suitable investment ideas. The context of the payout decision is important to the markets.
- The impact on eps of a share repurchase can be positive or negative. Usually, the positive impact of reducing the number of shares more than compensates for the negative impacts of reducing interest income.

KEY TERMS IN THIS CHAPTER

- Agency theory
- Repurchase of shares
- Buyback
- Scrip dividend
- Dividend policy
- Stock dividend
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15. Acquisitions, mergers and selling a business 258
16. Restructuring a company 276
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Floating a company

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OVERVIEW

There are two reasons why a company might choose to float its shares on a recognized stock exchange – cash-in and cash-out. A cash-in float is done by growth companies which seek funding; in a cash-out float existing shareholders take the opportunity to sell their shares, and the company does not necessarily raise further finance. It is important that the company makes its strategy clear to the financial markets, as the exercise of flotation is as much about presentation and marketing as it is about financial strategy.

Flotation is a costly and time-consuming exercise. Shareholders and boards who are considering listing their companies have to consider carefully why they wish to do so, and the benefits they expect from the process. They also have to consider which stock market(s) are appropriate for their business, and whether they meet the requirements of those markets.

The burdens of being a listed company persuade some shareholders and boards that listing is no longer appropriate, and many companies choose to de-list from their markets. This frees them from much regulation and public accountability and, for many small companies, has little downside.

INTRODUCTION

In Chapter 8 we discussed how flotation on a recognized stock market may be an appropriate strategy for growth companies seeking to raise capital and provide an exit for their venture capital investors. This chapter addresses in more detail the reasons why a company might float, and the mechanisms by which it can do so.

The first point to note is that the flotation process is not really a ‘finance’ issue. Although the decision as to whether listing is appropriate one that should be driven by financiers (based ultimately on the company’s corporate strategy), the actual process of listing is a marketing issue. In Figure 1.2 of this book we stated that investment is a two-stage process: investors invest in the company; the company invests in projects. Arranging the sale of the company’s products to its target market is widely accepted as an issue for marketers, who advise on the most appropriate positioning and methods of sale. Similarly, arranging the sale of the company’s shares to its target market of investors is also a marketing issue: much of what follows will make more sense if you keep this in mind.

ISSUES TO BE ADDRESSED PRIOR TO LISTING

Several issues need to be considered before the IPO (initial public offering) can actually take place. These are:

1. What is our reason for going public?
2. What is our target market?
3. Are we suitable for listing on this market?
4. What method will we employ for the listing?

Each of these considerations will be addressed in turn.
WHY GO PUBLIC?

The two fundamental reasons why a company might seek a listing can be categorized as ‘cash-in’ and ‘cash-out’. To expand on this, a cash-in float is one which is done for the purpose of raising funds for the company’s continued expansion. By definition, cash-in floats are for growth companies, which issue new shares to obtain the funds they need. In a cash-out float, the main purpose of the listing is to obtain an exit for some of the existing shareholders, rather than to raise new money. In such a float, no new shares are issued, instead the existing shareholders sell all or part of their holdings to the new shareholders. Such a flotation would be appropriate for a more mature company. Figure 14.1 illustrates the characteristics of the two types of float¹.

As stated earlier, a flotation is a marketing exercise, and it is important that the marketing message is clear, so that ‘customers’ are not confused. A cash-in float signals to the market that the company is seeking growth; this is likely to be confirmed in the explanation in its prospectus of its proposed dividend policy. A cash-out float is more appropriate for mature companies, which are likely to pay higher dividends and will attract a different type of investor.

It is possible to mix the two. Over the past decade there has been a notable increase in the number of companies doing a ‘cash-in, cash-out’ float, and combining the motives. These can be successful when the story is clear, for example, when it is obvious that a venture capital investor wishes to exit, but there is still a growth story for the incoming shareholders.

A mixed message sends the wrong signals to the market. One of the authors was asked a few years ago to advise on financial strategy for a growing, profitable software company. The owner/director, who was a key employee of the company and had overseen all of its development to date, wanted to float the company, realize his investment and then ‘go off to the Bahamas to play golf’.

Sadly, he had to be advised that the market was unlikely to accept this as a value proposition – for key personnel to bail out of what was obviously positioned competitively as a growth company was going to invoke a certain level of ‘cognitive dissonance’ amongst prospective shareholders; to put it bluntly, who would buy the shares if he had so little faith that he was selling out?!

Although a cash-out float is intended to realize the investment, this may not happen completely in the short term. Sometimes there will be a ‘lock-in’ (also known as a lock-up) period of between three months and two years following the float, during which a significant shareholder has agreed not to sell its shares. This helps provide a more orderly market, but does mean that for a shareholder who really needs an exit, a trade sale might be a more appropriate means than a flotation.

Other, secondary reasons why a company might choose to go public include:

- the desire to have shares which can act as a currency in acquisitions (as discussed in Chapter 15);

¹ For convenience, the pre-listing company is referred to as ‘Ltd’ (limited) and the post-listing company is referred to as ‘plc’ (public limited company). It should be noted that under UK company law it is possible for a company to be a plc without being listed on a stock exchange.
the wish for future financial flexibility (a listed company tends to have more financing options than an unlisted one);
the desire for prestige, for either the company or the directors. (It goes without saying that we think very little of this last reason, but we do acknowledge that flotations are sometimes inspired because ‘so-and-so at the golf club did one’.)

Having a listing is also useful for companies that have issued, or wish to issue, shares or share options to their management and employees; the public
Floating a company quotation gives the staff a benchmark price, and provides an easy way for them to sell the shares in due course.

One issue to consider as part of the listing decision is the level of the ‘free float’ of shares. Just because a company is listed does not mean that all of its shares are available for purchase by the public: a significant proportion might remain in the hands of insiders. For example, if a founding family chooses to float the company to raise funds, but retains ownership of 40% of the company with no intention to sell, the free float is only 60% of the shares. If the free float is perceived as being too small, then the market might be less willing to buy the shares, and listing on certain exchanges might not be appropriate.

**WHICH TARGET MARKET?**

Companies will target potential investment markets in much the same manner that they target markets for their products. There are two key issues to consider here: what type of investor is likely to buy our shares? and which stock market is best suited to our needs?

As regards the type of investor, the issue has been highlighted many times already in this book. Investors who seek dividend income are unlikely to be attracted to growth companies which retain most of their earnings. Similarly, those looking for a capital gain are not going to be persuaded by the prospectus for a mature company.

As to the choice of stock market on which to float, this is a more complex decision. There is now a wealth of exchanges from which to choose. In the US there is NYSE (the New York stock exchange) or NASDAQ (National Association of Securities Dealers Automated Quotations) or several other exchanges. In Europe there are the various bourses of the individual countries, or pan-European platforms. The UK currently has its main market, the London stock exchange (LSE) and its offshoot AIM, the Alternative Investment Market. And of course other countries each have their own markets, whose operations and investors may be more or less sophisticated. These stock exchanges are all in competition with each other to attract listings. Working insight 14.1 sets out some of the factors a company should consider in making its decision.

The choice of market and country depends partly on the prestige and liquidity of the particular market and partly on what the company does. Rational

---

**WORKING INSIGHT 14.1**

**Factors to consider in choosing a market on which to list**

- Geographical location
- Liquidity of trading
- Regulatory, reporting and governance requirements
- Relative valuation of companies in our sector on this market
- Size of the market, and of the companies on the market
- Costs, both of the listing and ongoing costs
investors know that the market capitalization of a company should represent the discounted value of its future cash flows. However technology companies have tended to be more highly valued on NASDAQ than on NYSE or LSE, whilst natural resources companies often favour a London listing. Investors may tend to prefer dealing in certain markets, and they perceive less risk in industries with which they are familiar: hence a rational explanation is that NASDAQ investors, accustomed to technology shares, assign them a lower risk level and thus a higher value.

Investors are also comfortable with companies whose names they know, which is why most companies list on their home market. It might be foolish for a company with no trading presence in the US to list its shares there; it would be unlikely to receive much press coverage or analyst attention, and so could flounder in the backwaters of the market. However, companies which have a large trading presence in another country often choose to have a secondary listing on one of that country’s markets; increasing their name awareness in their product market by obtaining exposure in the capital markets. An example of this was the announcement by Indian steel company JSW, in autumn 2007, that it would be seeking a secondary listing in the US. JSW, with aggressive acquisition plans, had recently acquired three American steel companies, and was seeking to broaden its investor base². (Chapter 18 on International finance discusses secondary listings further.)

Another matter to consider in the choice of stock exchange is its corporate governance regulations. Governance in a stock exchange is a clear illustration of the risk–return trade-off. In Chapter 5 we discussed governance, and the need to protect the investor (particularly the minority investor) whilst still facilitating ease of doing business. For stock exchanges, the more regulations they have, and the more disclosure they require, the happier the investor might be – but the more frustrating it can be for the listed companies themselves. Exchanges have to find a balance between regulation and laissez faire. This is a matter for competitive strategy between exchanges. It is notable that a strengthening of governance regulation in exchanges in China and Brazil is reported to have increased the numbers of companies wishing to list there, as the markets have become more attractive to domestic and global investors.

Finally we come to size. Size matters. Although the listing regulations for the LSE state that companies with a market capitalization as low as £700,000 can list on this market, they would be foolish so to do. A glance at today’s financial press shows that the LSE’s largest companies are capitalized at well over £100 billion, with more than a thousand coming in above £100 million. Amongst these giants, how much attention are analysts and investors likely to pay to a ‘minnow’? (This issue is picked up again at the end of this chapter, when we look at reasons why companies de-list from a market.) Thus, although it might be painful to the directors’ ego, it is probably more useful to be a medium-sized company on a small exchange than to be a tiny company on a large one.

**ARE WE SUITABLE FOR LISTING ON THIS MARKET?**

Each particular stock market has its own regulations, which companies have to meet in order to obtain an initial listing, and to comply with on a continuous

---

basis in order to maintain it. As those rules differ between markets, and change frequently, little purpose is served by setting out the current versions in this book. However, Working insight 14.2 sets out some of the considerations that a company may need to address.

Beyond the regulatory influences, there are certain characteristics of a company that is suitable for flotation, and again we come back to marketing. The company is more likely to have a successful float if it can show a growing profit trend: an indication of future prospects. Directors with a strong personal track record of business success are another factor in its favour. Also, investors will be more comfortable with buying shares if they know that the business of the company is not in any way mingled with the separate interests of the directors. (For many private companies, directors’/shareholders’ and company’s interests are seen as one and the same thing, which means that a certain amount of ‘pre-float grooming’ needs to take place, for example to make the accounting policies consistent with good practice, tidy up the balance sheet to write off those debts that are never going to be recovered and remove the family villa in Spain!) And it goes without saying (and indeed is generally a Stock Exchange requirement) that the company’s accounting systems will be in order, and its internal controls will be sufficient.

METHODS OF GOING PUBLIC

Having selected the market and groomed the company for its float, the final consideration is the method of flotation. Very briefly, there are three possible methods of flotation: a public offer, a placing and an introduction.

In a public offer, which is the most expensive way to float a company and therefore generally only used for large issues, the sponsor (see later in this chapter) will offer shares widely to both private and institutional investors, generally at a fixed price. The prospectus will be carried as an advertisement in the national press, adding to the complexity and costs of the issue.

Placings are a cheaper means of listing, and are the most popular choice amongst companies and their advisors. The shares are offered to a selected
number of institutional investors, with whom normally the sponsor has (or would like) a business relationship. This can result in a relatively narrow investor base for the company, but this may not in itself be seen as a disadvantage – the cost of communicating with a wide retail investor base is considerable.

Finally, a company can also come to the market by way of an introduction. This takes place when a company’s shares are already widely held, and it has no need to raise further capital. The introduction is a means of enabling the shares to be traded on an exchange, to the benefit of the existing shareholders who may otherwise have difficulty selling them. It may later be followed by a share issue.

THE LISTING PROCESS

As with regulatory requirements, the listing process will differ by stock market. What follows is a broad description of the key parties, and the documentation that will be produced.

The first thing to note is that listing is not cheap. There are many documents, and many advisers, and costs mount rapidly\(^3\). The company will need to prepare a prospectus (otherwise known as listing particulars), sample contents of which are illustrated in Working insight 14.3. It will need to produce (although not for publication) cash flow forecasts to be verified by reporting accountants, confirming its ability to survive on the funds to be raised. Those accountants will also produce a due diligence report, again not for publication, addressed to

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**Illustrative contents of listing particulars**

- Details of the shares to be issued, and full details of the share capital of the company, including the rights of different types of share.
- Information about the business of the company, its performance, risk factors affecting it, and the markets in which it trades.
- Information about the directors and key personnel.
- Confirmation that the company will have sufficient funds in the foreseeable future.
- Information about any unusual contracts entered into by the company of which shareholders should be aware.
- Details of any ongoing or potential litigation.
- An indication of the company’s dividend policy after flotation.
- Accountants’ report on previous years’ financial results.
- Anything else that might be of interest to the potential shareholders.

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\(^3\) Oxera suggest that legal, accounting and advisory fees for a listing on LSE can take between 3% and 6% of the proceeds. See *The Cost of Capital: An International Comparison*, LSE/Oxera, June 2006. However, for a smaller company the costs can take a considerably higher percentage of the funds raised.
the company and its sponsors, confirming the company’s financial and trading position and reviewing in detail its governance and internal control systems. A report on its prior years’ audited results will also be prepared, to be included in the listing particulars. And then there are investor presentations, press releases and a wealth of legal documents.

Preparing and reviewing this mass of documentation, and actually getting the company onto the market, involves many different parties. Working insight 14.4 sets out brief details of these protagonists and their roles in the drama.

**Who’s who in a flotation**

**Sponsor**
- Often an investment bank or corporate finance advisor. They project manage the issue, liaise with the various parties, and advise on all aspects. They effectively (but not necessarily legally) share responsibility with the directors for the contents of the listing particulars.

**Broker**
- Will advise on the ultimate offer price and liaise with the investment community.
- May arrange the underwriting.
- (Often the same company will provide sponsor and broking services.)

**Underwriters**
- The main underwriter guarantees (for a fee of between about 3% and 7% depending on the stock exchange chosen) that the company will be able to sell its shares, as they will take them should the issue not be popular in the market. (Effectively, the underwriter sells the company a put option on the shares.) This risk is laid off to sub-underwriters (who receive a large part of that fee).

**Reporting accountants**
- Prepare the accountants’ report on prior years’ results. Review the company’s cash flow forecasts. Carry out due diligence on behalf of the sponsor.

**Solicitors**
- Solicitors to the sponsor and solicitors to the company (normally separate firms). Review all legal documentation and ensure compliance with relevant regulations.

**Public relations firm**
- Promote the company within the investment community prior to and post-float.

**Registrars**
- Responsible for sending out the share certificates and managing the share register.

**Receiving bankers**
- To whom the payment for shares is sent.

**Security printers**
- Prepare many drafts of the extensive documentation required for a listing, to tight deadlines.
An obviously important consideration in the flotation process is the price at which the shares are listed. It would be nice to be able to tell you that the company’s advisers consider in detail its projected cash flows out into the future, and discount them at a cost of capital to arrive at a valuation. Nice, but alas untrue. Although valuation on fundamentals does undoubtedly take place, much of the art of pricing IPOs depends on finding a suitable comparator share and using its price/earnings multiple as a benchmark. Market multiples have far more significance in the process than academic purists would care to admit. Similarly, the absolute value of the shares plays its part: the authors have seen at least one flotation before which the company did a one-for-one share split in order to double the number of shares, halving the potential share price so that it would not seem excessive when compared to its nearest comparator!

On the subject of pricing, what does ‘good’ look like in a float? When Company X’s shares are listed at 100p and immediately climb to 200p in the first few hours, is that good? When Company Y’s shares float at 100p and fall to 50p by the end of the first day, is that good? The answer to both of those questions is ‘no’.

If the share rises greatly in price in the first few hours or days of trading, the implication is that the advisers have got the price wrong. The shareholders who bought into Company X on the listing have made a 100% profit; they are happy. But the company could have issued half as many shares and raised the same amount of cash, so it has unfairly diluted its existing shareholders by issuing shares at an undervalue. Or it could have raised twice as much money by issuing the same number of shares. As for Company Y, its new shareholders no doubt feel bitter about ‘being conned out of their money by an over-priced issue’. The company has obtained the funds it sought, and has created value for any exiting shareholders, but at the expense of its future goodwill in the investment community. Next time it tries to raise capital, investors will remember this debacle and be suspicious.

In a ‘good’ float the shares are priced at about 10% less than where the advisers expect the closing price to be at the end of day 1. Such a discount – which is easier to describe than to manage – enables the new investors to feel mildly content with their investment, whilst providing reasonable value to existing shareholders. Case study 14.1 illustrates this.

A further issue to consider about the flotation process is the time it takes. Were you to look at the promotional documentation issued by many of the leading stock exchanges, they set out an illustrative timetable for flotation that starts with appointing advisers and ends some five or six months later on ‘impact day’ when the shares are quoted on the market. In practice, the listing process can take a lot longer than that. Indeed, if advisers think it desirable for the company to engage in pre-float grooming, tidying up its balance sheet and capital structure and ensuring a steady trend in profit growth, the process can take several years.

INVESTOR RELATIONS

During the flotation process, the role of investor relations is important – it is part of the marketing effort in selling the company to the markets. But post-float, investor relations is equally necessary. Companies need to ensure that their
investors understand their businesses and strategies, and that they are followed by sufficient analysts to ensure a good flow of information to decision makers in the markets.

A company will generally use specialist financial public relations consultants to assist in its investor relations. Such specialists should understand the investor markets, and also the detail of the regulatory requirements, as it is important that information reaches the markets in an appropriate manner.

**CASE STUDY**

**14.1 SMURFIT KAPPA: A GOOD PRICE**

In March 2007 Smurfit Kappa, Europe’s largest cardboard box manufacturer, floated on the Irish and London stock exchanges. At a time when stock markets were volatile, the listing was priced at €16.50, which was just above the middle of the official range of €14–18. The float raised €1.3 billion, and gave the company a market capitalization of some €3.4 billion.

The shares rose to €17.55 at the end of the first day, an increase of 6.6%. This would have left the investors feeling content, whilst the management and existing shareholders would not think that they had sold too cheaply.

(The company’s private equity backers had agreed a lock-in period of six months before they could sell their 40% shareholding. After the flotation, the share price rose to a peak of over €20 but then followed the markets down, being only about €16 once the lock-in period expired. However, this fall appears to reflect market factors rather than being company-specific.)

Sources: www.smurfitkappa.com and Financial Times.

The first section of this chapter set out the advantages of listing for a company. Having set out the complex decisions and processes involved the question has to be asked ‘why would you want to float: is it worth it?’ Certainly, for growing companies seeking access to a new and extensive source of funding, flotation is an excellent way to proceed. But a note of caution should also be exercised. In this section we set out some of the reasons not to seek a public listing.

1. Flotation involves a lot of time and cost, as discussed earlier. More significantly, during the period when the company is preparing for flotation its senior management will be unable to focus on the business itself. Their time will be taken up in endless meetings, and in making the rounds of the investing institutions to pitch to their prospective ‘customers’. Unless this is carefully planned, the company’s business can suffer during this period.

2. As the CEO or chairman of a listed company, less of your time is spent on running the business, even post-float, as a considerable proportion of your time will be involved in dealing with investors and analysts. The larger the company, the more investor attention it attracts and the greater this time.

3. For both the company and its directors, flotation involves a heightened public awareness of what they are doing. Directors of listed companies become public figures; often, even their private lives are reported upon by the press. For the company, results and strategies are analysed in close detail, often critically,
by commentators who may have only a scant understanding of the industry dynamics.

4. Corporate governance requirements on listed companies are considerable, and independently minded executives may feel that they interfere with the smooth running of the business.

5. Many directors take the position that investors have a short-term view. This is why they focus on manipulating earnings per share in quarterly or half-yearly results; they claim that the market would not understand the long-term implications of a strategy that decreased short-term profitability.4

6. Once listed, the company may become vulnerable to a hostile takeover. (Takeovers, hostile and otherwise, are discussed in Chapter 15.)

7. Once listed, the company becomes far more susceptible to market conditions, and may see its market capitalization fall through no fault of its own. This is discussed further in the next section.

Given this list, the directors and shareholders have to decide whether they really want a listing, or whether their objectives could be achieved in another way. (The shareholders also have to make another decision: given that they choose to obtain a listing, are the current directors the people they want to present to the investment community, or is a change in management appropriate at this stage? In family-dominated companies this can be a particularly problematic issue.) An example of a flotation that was not a success for the investors is Sports Direct, as discussed in Case study 14.2.

## DE-LISTING

We have considered in detail how and why a company might list its shares. However, in recent years many directors of listed companies have chosen to de-list their shares, taking their companies private. Occasionally this is done because the company has fallen foul of the rules of its exchange, for example companies on NYSE whose share price falls below $1 for a period. More often, the privatization is voluntary, and the logic behind this action will now be considered.

A key reason for companies being taken private is that the directors believe, sometimes correctly, that the market is undervaluing them. This is often true of smaller companies in out-of-favour sectors. It was mentioned earlier that most of the attention of analysts and investors is concentrated on the larger companies – for example the FTSE 100 and the FTSE 250, which together comprise the 350 largest companies (by market capitalization) in the LSE. The Main Market of the LSE contains over 1,000 listed companies: therefore a lot of these are relatively neglected.

There is little liquidity in smaller company shares, for two reasons. Firstly, few investors wish to buy them because they are unknown, which means that not only do they not register on the radar as potential investments, but also

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4 Although there is certainly some truth to this, the market’s short termism is perhaps more discussed than evidenced. For example, were GlaxoSmithKline, one of the world’s largest pharmaceutical companies, to announce that next year it is slashing investment in research and development, profits would rise but the share price would plummet as investors immediately realized the impact on long-term cash flows and value.
that they are perceived as risky because fewer analysts report on them so less information is available. Secondly, as a practical issue, many large financial institutions will have a minimum dealing size, and would be unable to buy or sell a stake in a small company without significantly moving the share price. (Indeed, there might not be enough shares on the market for them to buy it at all.) And, of course, such extreme movements in the share price, quite apart from acting to nullify any potential profit on the transaction, will lead to additional volatility in the share price, and thus establishing it further as a risky stock.

In such circumstances, directors often decide that it would be in their and the company’s best interests if it were taken private. If the company was originally floated as a ‘cash-out’ float, then the financing for this should be easy to arrange, as mature companies tend to have strong cash flows against which the company could raise debt.

SPORTS DIRECT: POOR GOVERNANCE AND A LOSS IN VALUE FOR INVESTORS

The flotation of Sports Direct International on the LSE in February 2007 was eagerly anticipated by the financial press. The company was the UK’s leading sports retailer, and owner of several internationally recognised sports and leisure brands. Much of the press comment discussed the reclusive nature of Mike Ashley, the founding CEO who owned 100%, and commented on the difficulties he might find in running his successful business in the public eye.

Indicative values for the shares were in the range 250p to 310p; the float price of 300p, valuing the company at about £2.2 billion, was at the top end of this. Ashley sold 43% of his stake, raising over £900 million.

Falling stock markets hit the company’s debut, and the closing price on the first day was only 281p. This was unfortunate, and some commentators stated that the sponsoring investment bank should have factored market volatility into the offer price.

The fall in Day 1 price was only the first problem the company faced. The initial press comment about Ashley’s dislike of City protocol was prescient. Within three months the company had lost its highly respected Chairman, an individual brought in on flotation to strengthen the board and guide the newly public company, who stated that he had been unable to form a strong working relationship with Ashley. He left after a series of disappointments and frustrations: the company’s refusal to appoint advisors, or to engage with investors; unexpectedly disappointing trading; and Ashley’s personal purchase of significant stakes in related companies.

Two profit warnings, the departure of another non-executive director and Ashley’s continued eccentric behaviour led to a continued fall in the share price, and much adverse comment.

The company has undertaken a share buy-back programme, and has announced another. Ashley’s stake, 57% at flotation, has increased to about 70% as a result of this.

In December 2007, less than a year after the float, an analyst from the sponsors published research advising its clients to sell the shares, which were trading at less than 100p.

Sources: www.sports-direct-international.com and Financial Times.
Similarly, for a company that floated to raise cash and which has since become mature, there is now an ability to raise debt funding and the added incentive that the original reason for the float – to raise cash for growth – is superseded, so there is no further advantage to a listing. Even if the directors still believe the company to be in its growth stage, if its shares are rated poorly there is no further opportunity to raise additional capital at a sensible price (i.e. one which does not greatly dilute existing shareholders), and so the reasons for being listed have disappeared.

Another reason why a poorly rated company may wish to go private is a fear of takeover, particularly if it is apparently a well-performing company in an out-of-favour sector, as were many small engineering companies at the height of the dot.com boom. Although hostile takeovers are, as discussed in the following chapter, generally hostile to the directors rather than the shareholders (another example of agency theory), for many smaller companies these parties overlap significantly, and the individuals concerned may decide that it is in their own best interests to privatize.

The agency issue between directors and shareholders raises another concern. Directors are meant to act in the best interests of the shareholders over whose interests they are stewards. However, if the executive directors of a company make a bid to take it private, their interests diverge from those of the non-director shareholders. Because of this in many jurisdictions, the UK being one, there is a requirement that the non-executives play an active role in such privatizations, taking independent advice in order to inform the shareholders whether the bid is reasonable at an acceptable price. This is illustrated in Chapter 17, with the case of Alliance Boots.

Even if the company’s shares are not underperforming, the directors may decide that privatization is a preferable option. This is often because they feel that the market is too short termist, and is restricting the company’s long-term growth opportunities. Or they might feel that the public scrutiny of their own performance is unacceptable, and wish to regain the independence of action that they had as executives in a privately held business.

Of course, de-listing a company is carried out more easily when the directors still own a substantial shareholding. This means that (a) the vote in favour of de-listing is more certain to be passed and (b) less cash needs to be found to finance the deal, as fewer shares are in ‘public’ hands needing to be bought out. But it does occasionally happen that a management buy in team makes an offer to take private a listed company, often against the wishes of the existing management. This might happen in circumstances where the market is undervaluing a good company. The bidding management can see the possibility of running the company privately for a few years, then re-floating it at a more propitious time.

De-listings of public companies are a significant source of deals for the private equity sector, and are discussed again in Chapter 17.

**KEY MESSAGES**

- An IPO is a useful means for a growing company to raise money (a cash-in float) or a more mature one to provide an exit for some of its shareholders (a cash-out float).
• The decision as to whether to float is a financial one, but the flotation (IPO) itself is a marketing exercise, with the product in question being the company and its shares.

• The choice of which stock market to use is dependent on various factors including the company’s home and trading region(s), its size, and its industry. Some companies chose to have a secondary listing on another market, to access a wider pool of investors.

• Different stock markets have different regulatory requirements. Stronger regulation might give more confidence to investors (meaning lower perceived risk and therefore a lower cost of capital and more potential players in the market). In order to list its shares, a company will have to meet its market’s requirements, which often include matters such as its trading record, structure and reporting systems.

• The listing process can be time consuming. It will almost certainly be expensive, with many advisors and much documentation. The method by which the shares are listed will also have an impact on the cost.

• Price-setting for a listing is an art rather than a science. A successful float will result in the company’s share price at the end of the first day being slightly higher than the listing price.

• Many boards choose to de-list their shares, taking the company private. This may be because there is no longer a need to raise money, or because they are disappointed at the price the market is attributing to their business. Sometimes, an outside team bids for the company, buying it with private equity backing. The process of privatization is fraught with the potential for conflicts of interest.

**KEY TERMS IN THIS CHAPTER**

- Cash-in
- Cash-out
- De-listing
- Flotation
- Free float
- Introduction
- IPO (Initial public offering)
- Investor relations
- Listing
- Lock-in (lock-up) period
- LSE (London Stock Exchange)
- Market capitalization
- NASDAQ
- NYSE (New York Stock Exchange)
- Offer for sale
- Placing
- Pre=float grooming
- Sponsor
- Stock exchange
- Underwriting
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OVERVIEW

If research indicates that most acquisitions fail, why do companies undertake them? The most appropriate reason for undertaking acquisitions is to add value to the company, by enhancing its competitive advantage. In evaluating potential transactions, the seven drivers of value can be used as a way to determine if such value enhancement – often referred to as ‘synergy’ – stands up to scrutiny. The calculations underlying this analysis are vital to determine the ultimate value of the business combination to the bidder’s shareholders, but bidders must remember that the value determined is not the same as the amount to be paid for the target; many bidders overpay, and effectively give away the synergies to the target’s shareholders.

Listed companies can finance acquisitions by offering their own equity to the target shareholders as an alternative to a cash offer. Both sets of shareholders need to evaluate whether a share-based or cash-based bid will be appropriate. Matters to consider in this evaluation include the relative valuations of the two companies, the potential for the bid to create value, the desire of the bidder’s management to retain control, and the financial strategy of the bidder. Lesser considerations include the impact that the financing of the transaction will have on the bidder’s reported financial results, and, in particular, on its earnings per share (eps).

Acquisitions are sometimes structured as earn outs, whereby the manager/shareholders of the target company agree to stay with the company for a period post-sale, and their consideration for the sale depends in part on the target’s performance in that period. Such a deal structure has both advantages and disadvantages for each party, but invariably makes the transaction more complex.

We also consider sales and disposals, and examine defence strategies that can be used to deflect hostile bids, whilst pointing out that such strategies are not always used in the best interests of shareholders.

INTRODUCTION

We established in the first part of this book that companies need to grow in order to generate capital gains for their shareholders and to justify the growth value already priced into their shares. There are two main ways in which this growth can be obtained: organically, and by acquisition. Organic growth is often less risky, but it can be difficult for larger companies; doubling in size is simpler for a company with £10 million turnover than for one turning over £1 billion. Accordingly, many companies look to acquisitions or mergers as a means to obtain the appropriate growth within the required time frame.

We tend in finance to refer to ‘acquisitions and mergers’. In an acquisition, one company (often, but not always, the larger) purchases the other. A merger is more of a meeting of equals; two companies of approximately the same size come together to form one new venture. (In past decades it has sometimes been useful, for financial reporting purposes, for companies to present a deal as a merger when in fact it was really an acquisition. However, changes to accounting standards have made this less relevant.) In this chapter the term ‘acquisition’ is used to cover both types of transaction.
WHY MAKE AN ACQUISITION?

Academic research shows that most acquisitions fail, in that they do not meet the original expectations of the acquiring party. Although such research can be vulnerable to misinterpretation (it is difficult to evaluate the aims and outcomes of transactions assessed from a distance) its results are widely disseminated in the popular and business press, and so must be known by most CEOs and finance directors. Nevertheless, acquisition activity is widespread, and not all of it can be driven by a desire to provide large fees to investment banks. So, why make an acquisition?

In our opinion, reasons for acquisition activity fall into two camps – good reasons and bad reasons. The over-riding ‘good’ reason is the creation of shareholder value; we have, after all, established this as the key corporate objective. More specifically, the good reasons can be analysed as follows:

1. To support value-creating growth that cannot be achieved organically.
2. To complement the business strategy by filling gaps in product range, market segments, geographic territories, technological know-how, etc. And possibly:
3. To prevent a competitor from making the acquisition.

We will come back to reasons one and two shortly. However, at this point we have to admit that we do have some doubts about this third reason, as often it is ego driven. On balance, we have included it under ‘goods’ rather than ‘bads’ on the basis that allowing a competitor to expand could in some circumstances lead to an erosion of one’s own competitive position, thus destroying value in the future – see Case study 15.1. Therefore, making an acquisition to prevent this – provided that the overall effect is value-enhancing – is a legitimate strategy.

The bad reasons for acquisitions, of which there are alas many practical examples, are:

1. To show better financial results (e.g. to increase eps, whether or not this increases shareholder value); and
2. Managerial utility (a polite way of saying ‘it’s much more fun to buy companies than it is to run them successfully, so that’s what we’re going to do’).

ACQUISITION TO THWART A COMPETITOR

One of your authors was involved in advising a medium-sized private company on an acquisition. The managing director, an experienced businessman, was seeking advice on the valuation of the potential target. He had valued it at £10 million, but the vendors would not sell for less than £12 million. He wanted to buy the company, but did not want to overpay.

On questioning, it turned out that if his company did not buy the other business, their chief competitor would. And if that company were to make the acquisition, it would set back our client’s growth plans by several years. Thus the added value of making the acquisition was significantly higher – getting it for £12 million was a bargain.
On the basis that we seek to inculcate good habits in our readers, we intend to ignore the ‘bad’ acquisition reasons from now on, and to focus on the good ones. And these can all be summarized in a term often used in describing mergers and acquisitions: ‘Synergy’.

Almost every acquisition we have ever seen or been involved in has been praised (by the protagonists) for the synergy created. In fact, the term is used so often that it is probably illegal to do a deal without mentioning it! But in the context of acquisition, what exactly does it mean?

The common shorthand used to explain synergy is ‘$2 + 2 = 5$’, that is if we put these two parts together the subsequent whole is worth considerably more than its components. However, this is the sort of woolly terminology that can be used to justify any deal, so let’s see what we can do to strengthen our understanding of the concept.

In terms of competitive strategy, synergy can be described as the creation of a sustainable competitive advantage, or the removal of a previous competitive disadvantage. The achievement of significant economies of scale or gaining much greater control over channels of distribution or sources of supply may enable the enlarged business to improve its financial return. In these cases the financial justification for the acquisition should be that it would be much more expensive and/or more risky to try to achieve the same improvement in financial return by organic development of the business.

An even tighter definition of synergy can be obtained by referring back to Rappaport’s seven drivers of value, discussed in Chapter 1. Rappaport stated that shareholder value can be calculated based on the following drivers:

1. Increase sales growth
2. Increase operating profit margin
3. Reduce cash tax rate
4. Reduce incremental investment in capital expenditure
5. Reduce investment in working capital
6. Increase time period of competitive advantage.
7. Reduce cost of capital.

This listing can be used as a checklist for identifying synergies, as set out in Working insight 15.1.

The checklist set out in Working insight 15.1 provides a way to quantify the potential synergies from an acquisition. It takes away the ‘wishful thinking’ element of the deal, and sets out clear post-integration targets. It can also be taken a stage further: as well as asking ‘Over what period and by how much?’ one could add ‘And whose responsibility is it to achieve this, to what milestones?’ If more deals were subject to this kind of analytical rigour, fewer deals might be done!

Case study 15.2 sets out an example of a deal where the synergies were quantified, broadly, to the investor community, in order to gain shareholder support for a large transaction.

Discussion of deal synergies leads us conveniently to the next section: how should the deal be valued?
Synergy checklist

1. Does this deal increase sales growth (e.g. by expanding distribution networks or product lines)? Over what period and by how much?
2. Does it increase the operating profit margin (e.g. by eliminating cost duplication, creating economies of scale, or transferring best practice from one company to the other)? Over what period and by how much?
3. Does this deal reduce our effective tax rate (e.g. by locating plants or profits in a more tax-efficient part of the world)? Over what period and by how much?
4. Does the deal mean that we can save on capital expenditure (e.g. by merging manufacturing facilities to improve utilization, or by getting rid of one of the head offices)? Over what period and by how much?
5. Does the deal lead to better working capital management (e.g. by pooling inventories, or transferring best practice in debtor management)? Over what period and by how much?
6. Does the deal extend our competitive advantage period (e.g. by extending the brand franchise)? Over what period and by how much?
7. Does the deal reduce our cost of capital? Why? (If both companies have the appropriate capital structure already in place, then their combination should not make a difference.)

ACQUISITION OF ICI BY AKZO NOBEL

In August 2007 a transaction was announced between three multi-nationals in the chemicals and coatings industry. Akzo Nobel (AN), a Dutch company, was to acquire UK-based ICI, for about €11.9 billion (£8 billion) cash. It had entered into a back-to-back agreement with German-based Henkel, which would then acquire the electronics and adhesives businesses of ICI for about €4 billion, to add to its adhesives division.

The expected synergies on this transaction (which is scheduled to complete some time after this book goes to press) were quantified by both companies in their investor presentations.

For AN, the synergies lay in the strengthening of its chemicals and coatings business, to make it a global leader. The investor presentations showed both revenue and costs synergies. The two companies had complementary market positions in different parts of the world, and there was the expectation that sales could be strengthened in each others’ territories. Cost synergies amounting to some €280 million per year, pre-tax, were also planned. These included economies of scale in raw materials procurement (€65 million), streamlining of operations (€65 million) and the reduction of other expenses (€150 million). These synergies would be offset by acquisition and restructuring costs in year 1 of some €315 million. AN’s initial investor presentation showed that the acquisition would generate returns in excess of the cost of capital by year 3; subsequent press releases improved these targets.
ACQUISITION OF ICI BY AKZO NOBEL (CONT)

Henkel also set out its expected synergies. Already a global leader in its market, this acquisition cemented its position as the leading player – a position which would have been threatened had the second-largest player in the industry acquired the ICI businesses instead. The acquired businesses complemented its operations geographically, and in terms of product and customer categories. Revenue synergies of about €70–80 million per year were anticipated, with specific examples of these given to investors. Cost synergies of €170–180 million pre-tax were to come equally from better procurement; sales, servicing and R&D costs; and administrative overheads.

Sources: www.akzonobel.com and www.henkel.com

CASE STUDY

15.2 HOW MUCH TO PAY?

It is often said that acquirers overpay for deals. Certainly, an analysis of where value lies in an acquisition will lead the researcher to conclude that in general the vendor shareholders obtain a better deal than the acquiring shareholders. But the ‘overpay’ proposition tends to be made on the basis of prices paid for acquisitions of listed companies – these are often at a premium of 30% or more over the target’s pre-bid share price.

To assume that an acquirer is overpaying merely because the bid price is greater than the pre-existing share price is a fallacy. There are two reasons for this.

Firstly, it is a misconception to assume that the market capitalization of a company (the current share price multiplied by the number of outstanding shares) represents the value of that company. It doesn’t. The current share price for any company represents the price at which most shareholders were not persuaded to sell their shares. Only a tiny fraction of any company’s capital changes hands on any day, and the quoted price is merely the price of the latest transaction. If this were an over-value, it presumably would persuade most rational investors to sell out. Even if the quoted share price exactly equalled the ‘fair’ price, it is reasonable to assume that more shareholders would sell (assuming that shareholders’ expectations of future performance are distributed normally around the mean of ‘fair’ price). Thus the market capitalization should be perceived as an undervalue, and shareholders need to be offered a premium to persuade them to sell.

Secondly, shareholders understand markets. A bidder for the whole of a company’s share capital is creating a situation in which demand exceeds supply; the share price obviously goes up to reflect this. And the shareholders realize that acquiring 100% of the company puts the acquirer in a far more powerful, and valuable, position than an investor acquiring a small stake: accordingly they make the bidding company pay for this value.

The issue for the bidder is to ensure that the amount paid for the business does not exceed the value it will generate. Here is where the analysis of synergies from Working insight 15.1 can be used. Figure 15.1 illustrates how value is added in a deal.
The value diagram in Figure 15.1 starts on the left hand side of the page with the value of the company to the vendor. This may be the market capitalization, but a bidder would be better to undertake an analysis of value under the target company’s existing strategy and management. From this point the bidder can add in the value created by each of the identified synergies; the seven broad drivers included in Working insight 15.1 may be broken down at this stage, to identify, for example, how much value will come from better procurement practices, how much will come from elimination of duplicate expenses, or how much will be generated from manufacturing efficiencies. Account also needs to be taken of the ‘negative synergies’ – for example, customers whose business will be lost due to the new ownership of the business.

For illustration, Figure 15.1 includes only three types of synergy. Adding those to the base value leads us to the target’s potential value to the acquirer. However, this is not the amount that should be paid for the target business. Investment banks and lawyers do not come cheap, and substantial deal costs may be incurred before the transaction is complete, thus reducing the deal’s potential value. More significantly, reorganization costs such as redundancies and relocations need to be considered. The sum that remains is an indication to the bidder of the maximum amount that they should be prepared to pay for the target company.

This is where things often go wrong. The bidding team, with this ‘maximum amount’ fixed in their minds, are often prepared to pay up to this amount. To use the terminology of behavioural finance set out in Appendix 3, they tend to ‘anchor’ on this sum. This has the effect of giving to the vendor shareholders the benefit of all of the synergies that the company intends to generate – before it has even started. In other words, paying the maximum value for the target company represents a transaction at a net present value of zero: a fun exercise for management, but hardly a value-enhancing strategy. In a good deal, the
price paid will probably be greater than the vendor’s value, but should be signifi cantly less than the bidder’s maximum.

If the value to the vendor is higher than that to the potential bidder, then (unless vendor or bidder is particularly stupid) the deal will not proceed. Similarly in a competitive bidding situation, it is logical (but again not always true) that the bidder who can create the most value is the one who will win the deal.

It can be diffi cult to add value in an acquisition. Acquisitions raise shareholders’ expectations. After all, as shareholders in Company P we can go out and buy shares in Company Q. So if Company P itself chooses to buy Company Q it must be expecting to add some value that we as individual investors could not create. Furthermore, an acquisition premium will almost certainly have been paid – so Company P has paid more for Q than we would have ourselves. And fi nally, we must remember that the share prices of both companies undoubt edly have a present value of growth opportunities (PVGO) element, with future growth already priced into the shares. Thus if the acquisition is to create value, the combined organization has to outperform the growth already included in its share price. Working insight 15.2 illustrates this.

The detailed due diligence carried out pre-acquisition should be used to give an indication of the potential synergies and the realism behind the initial valuation assumptions. Due diligence is always worthwhile, but in scoping the level of work a balance has to be struck between the signifi cance of the deal, the likelihood of its going ahead, and the cost and timescale of the due diligence exercise. Key issues to address must be the main value drivers, and sensitivity analysis should be done to establish how critical these are, with due diligence used to confi rm that the minimum required level should be reasonably achievable.

In addition, this is one time when the detail of the accounting policies needs to be tackled, as the acquirer needs to know what the asset values and underlying cash fl ows are, and also what the Target’s profi ts will be under the acquirer’s accounting polices. In these days of ‘fair value’ in accounting, when mark-to-market and mark-to-model are common valuation techniques in fi nancial statements, this has become increasingly important.

**WORKING INSIGHT 15.2**

The need to add value in acquisitions

Target has eps of 10p, a share price of 200p and pays a dividend of 2p per share. Its cost of equity is 10%, which means that, with a dividend yield of 1%, investors are expecting growth in the share price of 9% per annum. Such expectations imply a share price of 308p in five years’ time.

Bidder buys Target for 250p per share. Assuming the same cost of capital and dividend yield, annual growth of 9% means that a share price of 385p is required by year 5. This implies eps growth (assuming no change in the P/E ratio) of 14% per annum. Unless Bidder can increase Target’s growth rate by an additional 5% per year, it is destroying value for its shareholders.
Deals can be financed by an exchange of shares, or through some form of cash. In an exchange of shares, the shareholders of the target company exchange their shares in Target for shares in Bidder. A cash deal involves Bidder paying cash (from its existing resources, or financed through raising debt or by issuing new shares on the market) to the Target shareholders. Thus a share exchange adds the Target shareholders to the shareholder base of Bidder; a cash bid means that Target shareholders do not participate in the future of the combined company.

Deal finance can be considered in two separate ways: we can look at value-enhancing strategies, and we can consider eps-enhancing strategies. Naturally, your authors believe strongly in the former, but a jaundiced view of the markets indicates that many companies put enhancement of eps above shareholder value, so this is where we will start.

FINANCING ACQUISITIONS USING EPS-ENHANCING STRATEGIES

If the acquisition finance is to be structured so as to enhance eps, there are two ‘rules’ to note:

1. If the Bidder P/E is higher than the Target P/E, using equity to finance the deal will increase eps; if Bidder P/E is lower than Target P/E then using equity will dilute eps.
2. If the company’s post-tax interest rate is lower than the inverse of the Target P/E ratio, then using debt will enhance eps; if the interest rate exceeds the inverse of Target P/E, then using debt will dilute eps.

These two ‘rules’ will now be explained.

Working insight 15.3 sets out an example of how the first of these rules works in practice.

Working insight 15.3 illustrates the fallacy of basing deal assessment on whether or not it is immediately eps-enhancing. The Bidder/Target combination
is ‘bad’ because it dilutes eps; the Target/Bidder combination is ‘good’. In either case the same assets have been combined – it’s just a matter of arithmetic. (The Annex to this chapter sets out a mathematical proof of why this is so.)

The other ‘rule’ to enhance eps related to debt financing. Working insight 15.4 sets out why this works.

### Using debt finance to enhance eps

Target has post-tax earnings of £500 and is being acquired for £10,000. Bidder can borrow at 6.25% and pays tax at the rate of 20% which reduces its cost of debt to an after-tax 5%.

Bidder is buying profits after tax of £500. The cost of financing the acquisition by debt is £10,000 @ 5%, that is, £500. Thus, in the first year the extra interest cost exactly cancels out the acquired profits.

The after-tax debt cost, 5%, is the inverse of Target’s P/E ratio of 20. If Bidder could borrow at less than 5%, the deal would be eps-enhancing in year 1. If its borrowing cost exceeded 5%, eps would fall.
Another use of the maths illustrated in Working insights 15.3 and 15.4 is to calculate, for a potentially dilutive transaction, just how much needs to be earned in first year synergies in order to make the deal earnings neutral. Working insight 15.5 illustrates this.

**FINANCING ACQUISITIONS USING VALUE-ENHANCING STRATEGIES**

As stated earlier, acquisitions can be undertaken by offering the Target shareholders shares in the bidding company (an acquisition for shares) or offering them cash. The choice of financing methods will depend at least partly on the business risk of the bidder and, if appropriate, the target company. The bidding company should not upset its long-term financial strategy without good cause.

It is important to note that although an acquisition for shares involves issuing new equity, an acquisition for cash need not be financed by raising debt. The bidding company could issue shares in the market and use the proceeds of the sale to pay cash for the target company. Figure 15.2 illustrates the different alternatives.

If the target company shareholders receive cash (however raised) for their shares, that is the end of their involvement with the company. However, in deals which pay the target shareholders in shares, they have an ongoing relationship with the company. Thus in share-based deals the vendor shareholders have various matters to consider:

1. Are both companies fairly valued? It is obvious that acquirers always need to understand the value of the target company, but if the target’s shareholders are to accept shares in the bidder, they need to know that this currency is not over-valued.
2. What are the prospects for the combined company? Again, this is always a matter of interest to the bidder’s shareholders, but in a share-based transaction...
the target’s shareholders are effectively agreeing to accept the risks and rewards of the ongoing company. One of the best pieces of advice given by one of your authors was to a friend who had been offered a large sum (payable in shares) by a quoted dot.com wishing to buy his fledgling internet company. The advice was ‘don’t see it as selling your company – what you’re doing is using your business as a currency to buy a small stake in a larger concern over which you have no control; do you feel comfortable about that?’ A year later his company was thriving … the quoted dot.com had gone into liquidation.

If a transaction is done for shares, the parties have to determine how the price is stated: as a fixed number of shares, or a fixed value. There will inevitably be a delay between announcing a deal and completing it. A deal which offers the vendor a fixed number of the bidder’s shares leaves the vendor exposed to the risk that the bidder’s share price will fall in the interim. On the other hand, a deal at a fixed value of shares protects the vendor, but leaves the bidder’s shareholders vulnerable to dilution should the share price fall.

**Figure 15.2**

<table>
<thead>
<tr>
<th>Financing acquisitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>How Bidder raises the funds</td>
</tr>
<tr>
<td>Issue new shares</td>
</tr>
<tr>
<td>Bidder’s gearing reduced due to new equity issued to the markets</td>
</tr>
<tr>
<td>Bidder’s gearing reduced due to new equity issued to Target’s shareholders</td>
</tr>
<tr>
<td>Issue debt or use cash from internal resources</td>
</tr>
<tr>
<td>Bidder’s gearing increased due to increase in net debt</td>
</tr>
<tr>
<td>Not likely to happen</td>
</tr>
<tr>
<td>Cash</td>
</tr>
<tr>
<td>Shares</td>
</tr>
<tr>
<td>What Target’s shareholders receive</td>
</tr>
</tbody>
</table>

**EARN OUTS**

Another way of structuring an acquisition may be through an earn out, in which the eventual price paid for the business depends in part on its performance in the early years following the transfer of ownership.
Earn outs are often used in the acquisition of private companies, for example in situations where the acquiring company wishes to retain the services and commitment of the director/shareholders of the target company, perhaps because they are crucial to operations. In a business which is very dependent on personal relationships, the bidding company may wish to retain the directors’ commitment for long enough to ensure that the goodwill and contact base are secure.

The earn out deal might be that the vendor shareholders receive £X immediately on completion of the deal, and a further £Y if profits of a certain level are achieved within one, two or possibly three years of the deal being done. This gives the key director/shareholders an incentive to perform well during the earn out period, as shown in Case study 15.3.

It should be obvious that earn outs will only be effective in situations in which the vendor shareholders are also the key management of the company, generally in private companies. If the management are not shareholders, an earn out will not benefit them, and management contracts might be a better way to achieve their commitment. If the shareholders are not managers, they may be very reluctant to agree an earn out, leaving their ultimate consideration in the hands of managers over whom they no longer have any sanction.

Earn outs may also be used as a means to resolve differences of opinion as to a company’s potential, and thus its value. It often happens that the target company is small, but with great prospects. Naturally, the vendors wish to receive consideration for the potential that they are selling to the bidder. However, the bidder, quite reasonably, could argue that it will not pay for unrealized potential that cannot yet be proved. An earn out may be used to resolve this situation, with the initial price reflecting the target’s current performance, and further payments being made if certain milestones are achieved.

Structuring a deal as an earn out has both advantages and disadvantages to the acquirer, as set out in Working insight 15.6.

For the seller, an earn out also has advantages and disadvantages. They have the potential to get more money, but it is not a clean break. Working insight 15.7 shows the earn out from the seller’s point of view.
SELLING A BUSINESS

Having considered acquisitions, it is worth turning briefly to examine matters from the point of view of a vendor selling his/her business. In this section we consider mostly the positions of owner/managers of private companies.

In our opinion, every owner of a private company should consider his/her eventual exit strategy. Do you intend to build the company up quickly and

---

**Features of an earn out to the acquirer**

*Advantages*

(a) Only pay for what is achieved.
(b) Defers payment, thus retaining cash resources (for a cash deal) or delaying dilution of eps and control (for a deal financed by issuing equity).
(c) Maintains the interest of key management during the transition period.

*Disadvantages*

(a) Difficult to achieve synergies in combining the businesses, as the continuing management will demand a free hand to run ‘their’ business.
(b) The earn out management have an incentive to run the business for the short term, focusing on a particular year’s profit targets. Longer-term investments in fixed assets, marketing, training or research may be neglected.
(c) In a share-based deal, if the bidder’s share price falls in the intervening period, it could end up issuing far more shares for the final consideration than was intended.

---

**Features of an earn out to the vendor**

*Advantages*

(a) Has the potential to result in a higher sales value.
(b) Deferring payment can sometimes have tax advantages.
(c) Keeps an involvement in the business, which is welcomed by some.

*Disadvantages*

(a) Unless covenants are in place to prevent the new owners from making radical changes, the nature of the business might be changed adversely, meaning that the profit potential can never be reached.
(b) Receipt of the final consideration is delayed.
(c) Receipt of the final consideration is dependent on the acquirer having the financial resources to meet its commitments. (If that consideration is in equity rather than cash, it is also dependent on the share price of the acquirer.)
(d) The ongoing involvement in the business might not suit a seller who wishes to sever ties and move on.
then sell out in five years’ time? Is your goal capital growth in the short or long term, or are you seeking a good lifestyle out of the business until your normal retirement age? Even if you intend to ‘work until you drop’, who will inherit the business from you, and what state will it be in? Will they want to inherit the role of managing it, or will its sale be their priority?

There are two main reasons for having your eventual exit strategy in mind. The first one is that owners who seek a lifestyle from the business will run their operations in different ways to those going for aggressive growth leading to an eventual sale. In particular, owners planning to sell out in a few years should be scanning the environment for potential acquirers, and perhaps grooming their companies for that eventual sale, in a similar manner to pre-float grooming discussed in Chapter 14. The second reason for owners to consider their eventual exit strategy is so that they can react more quickly to any out-of-the-blue offer for the business. (Of course, if enough money is offered, it may change your original plans, but it’s always useful to have an initial position.)

For larger businesses the exit could be in the form of a trade sale or a public flotation of the shares. It has become more common, particularly for businesses backed by private equity, to pursue both of these alternatives simultaneously; preparing for a float whilst actively marketing the business to trade or other private equity buyers. Although this takes considerable effort, it can have the advantage of increasing the price, and of ensuring an exit if trade interest does not materialize.

For a private company, if the out-of-the-blue offer is unwelcome, that is the end of the matter; no one can force the sale of a private company against the shareholders’ wishes. However, often an unwelcome offer is made for a listed company and it is these, hostile, offers which are discussed in the next section.

### DEFENCE STRATEGIES

An offer made to acquire a listed company which is rejected by the target company’s directors is known as a hostile bid. It is important to realize that the bid is hostile to the directors – the company’s shareholders may actually welcome the bid.

Why would the target’s directors reject the bid? There are two main reasons:

(a) Because they believe that the bid undervalues the company; that is, they consider that they can create more value for shareholders by continuing to run the company themselves.

(b) Because they wish to retain their jobs.

It goes without saying that we see the first reason as totally valid and the second as probably against shareholders’ interests. However, an examination of directors’ actions in bid situations leads us to believe that reason ‘b’ often applies in practice.

Directors fending off a hostile bid need a defence strategy (which generally comes courtesy of a host of highly paid advisers). The best defence strategy is to ensure that the company is correctly valued by the markets at all times. Given that quoted company acquisitions generally demand a significant price premium, if the company is fully valued, the potential acquirer is either creating
Acquisitions, mergers and selling a business

Synergies or is overpaying. In either of these situations, a bid is likely to generate value for the target shareholders.

As well as continually communicating with the markets to ensure an appropriate valuation, directors of listed companies should maintain a contingency plan of what they will do should an unexpected offer be made. This will help them to react more swiftly and efficiently to the offer. Such reaction will include the preparation of a comprehensive defence document to explain to shareholders why they should not accept the offer, and a concerted effort to woo key shareholders such as major financial institutions.

Within the UK, there are various strategies that can be adopted by the directors of the target company in order to fend off the bid. We list these in Working insight 15.8, but with a health warning – although they might enable the company to remain independent, they may also destroy value for the shareholders.

In other countries, a wider range of defence strategies may be available. For example, ‘poison pills’ are allowed in the United States and in various European countries. Some examples of these defence strategies are shown in Working insight 15.9.

**Defence strategies available to UK companies**

- Make an acquisition, thus making your company larger, and more difficult for the predator to digest.
- The ‘Pac-man’ defence: make a bid for the predator company itself.
- Dispose of some key assets which would be particularly attractive to the predator.
- Find a ‘white knight’ – another company which will acquire you, and will be more acceptable to the directors.
- Have the bid referred to the competition authorities, which may prevent it, but will almost certainly delay it considerably.
- Enter into a joint venture of part of your business with another company, which would be difficult for a predator to unravel.
- Arrange cross-shareholdings with industry associates, or with partners up and down the supply chain.

**Some examples of other defence strategies**

- Issue new shares at a discount to friendly shareholders, thus continually diluting the acquirer’s shareholding. (This is known as a ‘poison pill’, although that term has been used more widely to discuss other types of defence strategy.)
- Set up a ‘staggered board’ such that only a certain number of directors can be made to retire each year. Although this may not prevent the takeover, it means that some of the outgoing directors could retain their jobs for up to three years.
- Set up provisions in the company’s internal regulations such that a super-majority (say 80%) is required to agree a takeover rather than the customary 50%.
Again, we would point out that poison pills and the like may benefit the directors of the target company, but rarely add value for its existing shareholders unless they lead to an increased offer which is then accepted. It is very difficult to justify many of the tactics that directors use to defend against hostile bids. Poison pills impede the efficient working of the capital markets and deprive shareholders of a tool by which they can discipline an inefficient management.

**KEY MESSAGES**

- Acquisitions, properly planned and executed, can increase shareholder value. In order for this to happen, the protagonists must be clear about how and why this will occur.
- Synergies can be evaluated using the value drivers model, and due diligence should be focused on these critical areas.
- An acquisition raises performance expectations, as the bidder will generally pay more than market price for the target company, that is, PVGO will increase. Again, synergies need to be quantified to support this.
- Acquisitions can be financed by cash, or through the issue of shares. If the target’s shareholders take equity in the bidder, they retain an interest in the ongoing business and must be satisfied that it will perform under the new ownership, and that the bidder is fairly valued. If the deal is for cash, the target’s shareholders have a clean exit.
- Although the deal finance can be used to manipulate eps movements, it should be based on the company’s overall financial strategy.
- An earn out can keep key management with the company, and enhance the value the vendor receives. However, such deals can also cause operating problems for the future.
- Business owners should always be aware of the sale possibilities for their companies.
- Public companies can be subject to takeovers hostile to the management. Various defence strategies are available to protect against such unwanted interest. Not all of these strategies will create value for the shareholders.

**KEY TERMS IN THIS CHAPTER**

- Acquisition
- Bootstrapping
- Defence strategies
- Due diligence
- Earn out
- Eps enhancement
- Market capitalization
- Merger
- Poison pill
- Sale of the company
- Synergy
ANNEX: ‘BOOTSTRAPPING’ TO ENHANCE EPS

The following is a mathematical proof of why the purchase of a low P/E company by a high P/E company will lead to an increase in eps for the acquirer.

<table>
<thead>
<tr>
<th>Bidder company</th>
<th>Target company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td>Earnings</td>
</tr>
<tr>
<td>Share price</td>
<td>Share price</td>
</tr>
<tr>
<td>Market value</td>
<td>Market value</td>
</tr>
<tr>
<td>P/E</td>
<td>P/E</td>
</tr>
</tbody>
</table>

Therefore number of Bidder shares in issue = \( \frac{MV_b}{P_b} \)
Number of Bidder shares needed to acquire Target = \( \frac{MV_t}{P_b} \)

After the acquisition, the new company will have the combined earnings of Target and Bidder (assuming no synergies). Therefore, the new eps after acquisition will be:

\[
\text{eps}_{\text{new}} = \frac{(E_b + E_t)}{\text{total new shares}}
\]

\[
\text{eps}_{\text{new}} = \frac{(E_b + E_t)}{(MV_b/P_b + MV_t/P_b)}
\]

\[
\text{eps}_{\text{new}} = \frac{(E_b + E_t)P_b}{(MV_b + MV_t)}
\]

\[
\text{eps}_{\text{new}} = \frac{(E_b + E_t)P_b}{(PE_b \times E_b + PE_t \times E_t)}
\]

Now, if \( PE_b > PE_t \):
Replace \( PE_t \) with \( PE_b \) in the above equation.
Therefore

\[
\text{eps}_{\text{new}} > \frac{(E_b + E_t)P_b}{(PE_b \times E_b + PE_b \times E_t)}
\]

i.e. \( \text{eps}_{\text{new}} > \frac{(E_b + E_t)P_b}{(E_b + E_t)PE_b} \)

i.e. \( \text{eps}_{\text{new}} > \frac{P_b}{PE_b} \) (which is the same as eps old for Bidder)

Therefore \( \text{eps}_{\text{new}} > \text{eps}_{\text{old}} \) if Bidder P/E is higher than the Target’s.
Companies may need to be restructured to change their financial strategy or to help correct a market underpricing. Changes in financial strategy normally relate to a reduction in gearing. This can be effected by selling assets or raising new funds. In more serious cases, the restructuring might involve renegotiating terms with creditors, by extending loan repayment dates or by swapping debt into equity. This can be greatly complicated by the varying desires and legal claims of a variety of stakeholders, often in different jurisdictions. Changes in the market’s perception of the company are often managed by demerging units, in order to make the underlying value more transparent to shareholders.

Change is not comfortable; company reorganizations involve change. The implication of this is that company reorganizations are not undertaken lightly, but are done when something is wrong – either with the company, or with the market’s perception of it. This chapter considers reorganizations that are done in this context, from refinancings to demergers, and the issues that are faced.

If there is something wrong with the company itself, then the reorganization needs to address the internal issues. If the problem lies with market perceptions, then the focus is on revising how the company is viewed. Although there will be many overlaps in these types of reorganization, it is convenient to discuss them under these headings.

Put very simply, companies can face problems due to having the wrong business configuration or the wrong financial strategy. Many, many books have been written about business strategy and change management, and we would do the subject no service by adding our necessarily brief comments to that discussion. Hence, we focus on reorganizations that address situations where a company has the wrong financial strategy.

A company’s financial strategy may be wrong because it has too little debt, for example a mature company which has remained equity financed. To correct this, the company could re-balance its debt/equity ratio, perhaps by paying out a special dividend or undertaking a share buyback as discussed in Chapter 13. Alternatively, the company could put the money to good use by investing in a value-enhancing investment opportunity. Although the special dividend and buyback may technically be seen as company reorganizations, they hardly present problems, unlike the reorganizations that need to take place because a company is over-borrowed.

A company may have taken on too much gearing for several reasons. It could have been a deliberate, if misguided, financial strategy which has not worked out as expected. Or it could be because the financial strategy suited the company’s
then business conditions, but changes in circumstances led to a fall in operating profits, and a resulting debt problem. Although the reason for the decline will influence how the company chooses to reorganize, there are several generic strategies that it can follow.

Reorganization strategies can fall into the following categories:

1. Raise cash by selling assets, either outright sale of surplus assets or in a sale-and-leaseback transaction.
2. Raise cash by issuing new equity or another financial instrument.
3. Come to an arrangement with creditors to restructure existing debt.

In some jurisdictions, once it is decided that the company is savable under ‘intensive care’, the process of reorganization will be in the hands of the current management of the company: this is the case in the USA, where companies go into Chapter 11, giving management time to sort out the problem. Regulations in other parts of the world take the power away from the management – for example, the UK has a receivership process which puts a bank-appointed receiver in charge of sorting out the business. However, the generic strategies are valid for all jurisdictions.

**SELLING ASSETS**

The simplest way to manage the company’s affairs is by selling surplus assets. If the company clearly has assets which are not necessary for the operations of the business, then realizing the value in them is an appropriate strategy. Issues that may arise here include: (a) determining which assets are non-core; (b) finding a buyer; and (c) being prepared to take the accounting consequences.

As regards the issue of whether assets are non-core, sometimes it takes a fresh perspective on the business to determine this. Companies develop their own internal myths about which assets must be owned in order for them to run their business properly, or which business units are core to their offering. Sometimes a division which has been part of the corporate fabric for many years needs to be sold off to protect the viability of the others. Or, on a more modest scale, attitudes to asset ownership may need to be amended.

Of course, even if a company realizes that it has assets which could be sold, disposing of them at a good price may not be a realistic proposition. If it is known that a company is in financial difficulties, prospective buyers may bid low, or may decide not to bid at all, awaiting a possible ‘fire sale’. Or, if the company’s problems have resulted from poor economic conditions or an industry-wide collapse, there may be a glut of such assets on the market, or indeed no market for them. For example, European telecoms companies took on large amounts of debt during 2000 in order to acquire 3G licences from the various governments. At the time this debt was taken on, the markets were high and the telecoms companies anticipated being able to make asset sales in order to reduce the debt burden. However, the collapse in the value of technology stocks, combined with the many telecoms companies all needing to dispose of assets at the same time, meant that sale prices were far lower than originally anticipated, leading to liquidity problems for many of the companies.
Restructuring a company  279

And finally, we mentioned that the company has to be prepared for the accounting consequences. This comment arises from the experience of one of the authors when undertaking a pre-receivership investigation into a building company, on behalf of their bankers. The company was in a very bad situation – a fact not realized by the directors, who were not in the habit of using cash flow forecasts as part of their management information. However, it did own an apartment in London, bought many years ago when times were good in the housing market. It was suggested – strongly – that the directors sell the apartment as soon as possible in order to raise cash for the company. However, they refused on the grounds that the property had cost £400,000 at the height of the property boom; it would now fetch only about £250,000 and they did not want to sell at a loss. It was difficult to explain to them that they had already made the loss, and the only issue now was whether or not they realized it in the financial statements.

The scenario of directors, and particularly non-executive directors, not realizing just how bad the company’s financial situation is, is unfortunately not a rare one. Working insight 16.1 sets out some factors for boards to consider.

RAISING NEW FINANCE

The company may be able to pull itself out of the financial mess by raising new finance, from existing or new investors. If raising equity from existing shareholders, a deep discount rights issue may be appropriate. Rights issues were discussed in Chapter 10; a deep discount rights issue is one in which the pricing is at a significant discount to the pre-offer price. The case examples shown in Case study 16.1, illustrates deep discount rights issues as part of a balance sheet reconstruction.

These cases also illustrate the fact that a company will rarely reorganize merely by changing one thing. If the crisis is severe, or is likely to become severe, several different restructuring strategies will need to be managed in tandem to achieve the greatest effect.

The new finance that is raised need not be in the form of straight equity. It is sometimes possible for a company to raise the new funds in the form of a convertible (see Chapter 12). The advantage of a convertible to the investor is that

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**WORKING INSIGHT 16.1**

Some warning signs that action may need to be taken

- The company is trading close to the limit on its bank borrowing.
- Monthly management accounts continually show negative variances on sales.
- There are no monthly management accounts, or they arrive late, with inadequate explanation.
- Several key people leaving the company in a short period of time.
- Loss of several customers.
- Poor relationships with suppliers.
there is some downside protection, but still the upside opportunity to make the risk worthwhile.

**RENegotiating EXisting DEBT**

The third type of financial reconstruction relates to restructuring existing debt. If a company can convince its lenders that they will ultimately receive more by waiving interest payments or extending the term of a loan, then debt terms can be eased to aid the company’s short-term survival. Such renegotiations normally only work in situations in which the creditor banks are owed a significant amount: there is a saying which goes ‘if you owe the bank £5 million and can’t pay, you have a problem; if you owe the bank £5 billion and can’t pay, the bank has a problem’.

One form of debt renegotiation is the debt-for-equity swap, in which existing loans are released in exchange for the creditors taking an equity stake in the company. The argument behind these is that if the creditors insist on their debt being serviced and repaid, the company will be forced into liquidation and they
will lose their money anyway. However, if the debt is converted to equity, the creditors – now shareholders – will share in the ultimate upside if this causes the company to recover. Negotiations in debt-for-equity swaps revolve around the proportion of equity which is issued to the creditors; obviously, this new equity will significantly dilute the existing shareholders.

An example of debt renegotiation occurred with Eurotunnel, the Anglo-French company which built and operates the Channel Tunnel. In the latest restructuring (there had been several over the life of this over-leveraged company), in summer 2007, the company’s debt mountain of about €9 billion was halved, with the lenders swapping it into a majority of the equity in the restructured company, leaving the previous shareholders with only 13% ownership. The various claims of the shareholders and several tranches of debt took many months to negotiate. However, in the end the reconstruction had to be done – it had been anticipated that had the swap not taken place, the company might have had to be placed into liquidation.

There are likely to be many difficulties involved in debt renegotiation. As suggested, a fundamental problem is the different interests of the various stakeholders involved. If a company is over-borrowed there is rarely just one creditor; many banks may be owed money, with several different layers of debt, all with varying legal rights. This increases in complexity for an international or global business, where legal issues will vary by jurisdiction and assessing priorities on claims can be a minefield. Other stakeholders too may have issues to resolve and have power in the situation. This is illustrated in the case of UK bank, Northern Rock, discussed in Case study 16.2.

Each major stakeholder will probably appoint their own professional advisors, to protect their particular interests. This adds to the number of people around the negotiating table, and can itself cause delays in completing a reorganization.

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**REORGANIZATIONS TO ADDRESS MARKET PERCEPTIONS**

Sometimes the problem is not internal to the company, but relates to the fact that it is trading at a market value considerably below a fair value for its shares (in quadrants C or D in the Value Matrix in Figure 1.5). In such cases, if they wish to forestall an opportunistic takeover bid for the company, the company’s directors have several different options:

1. Demerger, to demonstrate the value in the group.
2. Blitz on public relations to change market perceptions.
3. Take the company private.

The issue of de-listing a company was discussed in Chapter 14 and will not be revisited here. Similarly, we will spend no time discussing how a company may improve perceptions due to a concentrated focus on public relations and explaining its true value to shareholders and analysts. In this section we focus on reorganizations as a way to address the issue of markets undervaluing the company: specifically the process of demerging or spinning off units.
NORTHERN ROCK: CONFLICTING INTERESTS OF STAKEHOLDERS

In September 2007 the international disruption of the credit markets meant that Northern Rock, a UK bank, was unable to refinance the short-term borrowings it was using to support its long-term lending and so had to ask the Bank of England for emergency funding. When this fact was made public there was a run on the bank, with customers queuing – sometimes for more than a day – to withdraw their money.

Customer panic was soothed when the UK government announced that it would underwrite all of the customers’ deposits (thus making these deposits one of the best investments in the country – paying commercial rates of interest for, effectively, a risk-free government investment).

Over the next two months the level of Northern Rock’s borrowing from the Bank of England rose, until it was well in excess of £23 billion, and future government commitments were uncertain. One way out of this for the government would be to find a buyer for the bank, who would repay at least part of the outstanding funds.

The various stakeholders in this were:

- The UK government, with a political and financial need to limit its ongoing exposure, but also a desire not to appear incompetent if an eventual purchaser made a large profit on the deal.
- The European Union, whose regulations prevent governments from providing financial support to ailing companies.
- Members of Parliament on all sides of the political divide, protecting the interests of their constituents and also trying to make political capital.
- Several potential acquirers of the bank, including private equity and other financial organisations, each with their own agenda.
- The customers of the bank, still nervous about getting their money back.
- Employees and their unions, concerned about future employment prospects.
- People in the north-east of England, where the bank is based and where it provides much employment and charitable support and is seen as a symbol of the success of the region.
- Retail shareholders in the bank, often individuals who had invested when it converted from a building society, who had assumed their investment was safe and were now losing their money. Many of these were residents of the north-east.
- Speculative investors, who had bought only when the bank was close to collapse, and so had a different agenda to the long-term holders of shares. For example, at the start of the sale process one hedge fund announced that it would vote against any sale of the bank at an ‘under-value’, thus putting its interests directly in opposition to the government’s.

1 As UK taxpayers we note with more than academic interest that normally when a company runs out of money the creditors get paid off and if there are insufficient funds the shareholders, as the ultimate risk-takers, bear the loss. This does not appear to be so in this instance. One commentator amended the aphorism we quoted earlier in this chapter: If you owe the bank £5 million and can’t pay, you have a problem; if you owe the bank £5 billion and can’t pay, the bank has a problem; and if the bank owes £20 billion and can’t pay then the government has a problem!
An explanation of some terminology is appropriate here. We will use the term ‘demerger’ to describe a transaction in which one listed company becomes two or more listed companies, generally with the same shareholders (at least initially). In a demerger, the two resultant companies will be of similar size. This differs from the transaction sometimes referred to as a ‘spin-off’, in which a company divests itself of a division (i.e. a much smaller entity than itself) by distributing the shares of the subsidiary to its own shareholders, generally in the form of a dividend. This differs again from an ‘equity carve out’, in which the subsidiary company (or generally only a minority stake therein) is sold to the public as an initial public offering. We should point out that the difference between the various transactions and straight sales of subsidiaries is generally one of size. A transaction would not be considered as a reconstruction unless the business disposed of formed a substantial percentage of the overall group value.

WHY DO COMPANIES UNDERTAKE DEMERGERS?

Sometimes, demergers are undertaken in order to focus management on one side of the business, and put a separate management team in place to deliver value in a radically different type of business that has just happened to be part of the group. This is a matter of corporate strategy rather than corporate financial strategy. However, here we are discussing demergers (in their various forms) undertaken in order to improve the value attributed to the business by the financial markets.

Often, a group includes two or more very different classes of business. This can make it difficult for analysts and shareholders to understand, and such a lack of understanding leads to underpricing in the markets. Splitting the group into separate companies, each in a defined business sector, clarifies the situation and enables investors to select where to invest their funds.

Research and market sentiment indicate that the post-demerger market value of the separate companies is normally greater than that of the whole group before demerger (an example of the sum of the parts being greater than the whole). Some reasons put forward to explain this are shown in Working insight 16.2, whilst Case study 16.3 gives an example of a spin-off.

WORKING INSIGHT 16.2

Why demergers are seen to add value

- Separation into clearly defined business segments leads to market transparency and greater understanding.
- The different businesses can follow financial strategies more appropriate to their activities.
- Improvements in corporate governance and efficiencies arise in companies which were subsidiaries but are now separately accountable to the markets.
- Incentive structures can be put in place that link management performance directly to the unit’s share price.
- Removal of the ‘conglomerate discount’.
After the demerger, each separate company can make its own investment and financing decisions and approach the capital markets in a way that is appropriate to its own asset structure, revenue sources and business objectives.

**CASE STUDY**

In January 2007 Altria, the owner of tobacco company Philip Morris, announced a spin-off Kraft, its food subsidiary, for approximately $46.1 billion. The statement issued by the Board in relation explaining the logic of the transaction stated:

‘We believe that the spin-off will enhance Kraft’s ability to compete more effectively in the food industry and provide it with an additional acquisition currency. It will also permit Altria and Kraft to target their respective shareholder bases more effectively and improve capital allocation within each company, and it will allow both Altria and Kraft to focus more effectively on their respective businesses and strategic plans. As a result, we believe the spin-off will build long-term shareholder value.’

Philip Morris had started the Kraft spin-off back in 2001 when it had raised about $8 billion by selling part of its subsidiary, but at that time it had retained most of the voting shares. Whilst this had raised money for the company, and had possibly shielded the Kraft business from the tobacco litigation facing Philip Morris, Kraft was still seen as tobacco owned at that time, limiting its attractiveness to many investors.

This final spin-off of Kraft was effected in March 2007 by giving each Altria shareholder 0.692024 of a share of Kraft, which was to list immediately on the New York Stock Exchange. Thus a shareholder in one listed company became a shareholder in both.

The shape of the Altria business is being radically changed in pursuit of value. A few months after the Kraft spin-off was completed, Altria announced its intention to spin off the international operations of Philip Morris, aiming to remove the overseas businesses from the legal constraints and litigation surrounding Philip Morris in the USA. The board’s statement on the proposed transaction refers to an expectation that the spin-off will enhance growth and create shareholder value for both Altria and the spun-off Philip Morris International business.

**Sources:** Altria.com and the financial press.

**KEY MESSAGES**

- Financial reorganizations can result from the need to correct external perceptions of the company, or can be due to the company needing to revise its financial strategy, generally to correct an over-geared position.
- Re-balancing the debt–equity mix can be done by retrenching or selling surplus assets; by raising new funds; or by renegotiating existing borrowings, often swapping them into equity.
- A reorganization often involves combining several different restructuring strategies. The strategies adopted will reflect the reason for the reconstruction.
- The process of restructuring is complicated for global companies by the differing legal rights of creditors in different jurisdictions.
• A demerger can change the market’s perception of the company, clarifying the value in each of its parts. A carve out or spin-off can have the same value-enhancing effect.

KEY TERMS IN THIS CHAPTER

Asset sales  Receivership
Carve out  Reorganization
Chapter 11  Restructuring
Debt-for-equity swap  Sale-and-leaseback
Demerger  Spin-off
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Although private equity (PE) has been around for many decades, in recent years it has become a major force in the financial markets. Many billions of dollars have been invested in large, leveraged deals, changing the ownership and financial profile of some large companies.

The PE industry operates within an intricate surrounding infrastructure of financiers and supporting professionals. It works by financing its acquisitions largely through debt, owning the businesses for a while, and then selling them on at a profit. The lack of constraint by public markets and a closeness of the PE owners to the management and the business mean that it is possible for the PE company to add value to its investment at the negotiation stage, during the ownership period and on the eventual sale.

The transactions discussed in previous chapters – flotations, acquisitions, and restructuring – can all have a PE element. PE has become an established part of the corporate landscape, with PE companies being significant players in many aspects of business life. In this chapter we look at the structure of the PE industry and then focus on PE transactions which contain a high degree of leverage.

In discussing ‘the PE industry’ we are conscious that it is not necessarily one industry. There is a variety of PE companies. A few firms, which garner most of the publicity, undertake extremely large, often international, deals. But there are many PE investors operating mostly in their domestic markets, undertaking large transactions, and more still that will be doing smaller deals. Hedge funds too also participate in this market, and have different operating structures and imperatives. By not differentiating these players we are doing them a disservice. Nevertheless, for the sake of brevity, that is what we will do. We occasionally, where appropriate, relate our comments also to fund-raising from venture capital companies, who finance the smaller, higher risk transactions.

Although the PE industry has become a dominant financial force in the last couple of decades, PE – equity invested outside the stock markets – has always existed. A business angel putting money behind a start up business is effectively issuing ‘private’ equity. However, the common understanding of the term is that PE is not high-risk venture capital, but refers to the role of non-listed equity in financing large leveraged transactions such as buyouts.

Many companies, large and small, regard themselves as PE players. In this section we set out some characteristics of the companies, and of the markets in which they operate.
THE PRIVATE EQUITY COMPANIES

PE companies raise funds and invest them in businesses with the aim of increasing the value of those funds many times over. The return for their investors is dependent on this investment performance. The PE companies themselves make money out of this, and also from the fees they charge their investees.

The PE companies can obtain their funds in several different ways. Some have raised money on stock exchanges, some are ‘captives’, investing the money of their parent companies, and some are independent funds.

A few listed PE companies have been around for a long time – for example, 3i plc, Europe’s largest PE company, was founded in 1945 (as a captive of the banks) and listed on the London Stock Exchange in 1994. It invests off its own balance sheet, but also raises independent funds. More recently there was a spate of listings of PE companies in 2006 and 2007, possibly driven by the perception of very high returns to be made. For example, the US saw the listings of Fortress Investment Group, and PE veterans Blackstone and Kohlberg Kravis Roberts (KKR). Listed PE companies have the advantage of a more permanent source of capital than captives or independents.

In captive PE companies, the managers are acting as employees of the parent bank, insurance company, or corporate (or, occasionally, government) rather than principals in their own business. This may lead to different types of behaviour, as their investment choices may be subject to different constraints, dependent on the changing nature of the parent’s demands. Captives too may raise independent funds to supplement the monies allocated by their parent; they are then referred to as ‘semi-captive’.

Independent PE funds are the most traditional method of raising money to invest as PE. Sources of funding may include banks, pension funds, insurance companies, large corporates, governments, and wealthy individuals. A PE company will raise a series of such funds, which will have a limited life, for example, 10 years. This means that investments tend to be made in the first half of the fund’s life, and realized in the second half; the average lifespan of an individual investment is considerably shorter than 10 years, and the time limit can influence investment behaviour, particularly regarding the need for exits as the fund’s end-date comes closer.

Independents are often structured as limited partnerships, with the PE company as the general partner and the investors as limited partners. The PE company will take a management fee, as a percentage of the monies raised (often 1–2%), and will also get a ‘carried interest’. This carried interest gives the PE company a share of all investment returns above a certain level. For example, the PE company might get 20% of any profits the fund makes in excess of 8% per year.

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1 Two matters are worth pointing out as regards these US listings. The first is that the transactions were sometimes structured so that the new investors did not have the same rights as the current partners, either in terms of voting or indeed as regards the potential for financial returns. And the second point to note is that these companies did their IPOs at a time when the PE market was considered by many to be over-heated: from their point of view, an ideal time to sell.
**THE SURROUNDING INFRASTRUCTURE**

For a PE industry to thrive, a suitable commercial infrastructure needs to be in place. As well as the PE firms, other sources of finance such as banks must be willing to participate. To support the transactions there needs to be a suitable professional class, including accountants and lawyers who understand this type of deal. Vendors of businesses have to accept PE as an alternative when they are selling, and management teams must appreciate the potential if buyout deals are to be done. Also, a strong stock market is an advantage, to facilitate exits. Without the combination of all of these, PE becomes very challenging.

Another vital ingredient is the legal and regulatory background. Governance structures should ensure the safeguarding of rights, for example, as regards the proper execution of contracts, or the protection of intellectual property. Without this investors, particularly those from another part of the world, are likely to be uncomfortable about committing their money: the balance of perceived risk and potential return may be too unfavourable.

**PRIVATE EQUITY DEALS**

In this chapter we are considering PE investment into large companies. Most of these transactions are leveraged, to take advantage of the fact such businesses can support gearing, and debt is cheaper than equity. Working insight 17.1 sets out some common types of deal.

For the sake of convenience, we often describe deals in this chapter as buyouts. Generally, our comments will applicable to all of the above types of PE deal.

These deals all follow the same commercial logic – the PE investor seeks a return that is more than commensurate with the risk taken on the investment. The deal process is set out in Figure 17.1.

An argument in favour of PE is that it has the potential to add value at each stage of this process.

1. **Find investment**: The PE company is actively seeking investments to make, and has a network of contacts to assist. Sometimes, potential deals are found before the rest of the market is aware of them. Often, PE companies choose to focus on a particular industry, which gives them an advantage in knowing where and how to look.

2. **Negotiate the deal**: Many people in business may buy or sell a company once; PE investors do it all the time, and so are more experienced at negotiation. Also, because their agenda is different to that of someone buying a business to run it, they might have less of an emotional commitment to the deal, and so walk away if the terms do not suit them. (Although this is not always the case – individuals working in this field are just as prone to behavioural biases as the rest of us.) They also have the advantage of having a substantial pool of money behind them, which encourages vendors to treat them seriously.

3. **Due diligence**: The negotiation would be conducted in parallel with the due diligence. It is worth noting that PE companies take due diligence very, very seriously and commit far more time and resource to it than do commercial buyers. They will investigate both the business and the management team, using their internal resources and a host of outside advisors.
### Common types of private equity transaction

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management buyout (MBO)</td>
<td>In this transaction, the company’s current operating management acquire the business, or purchase a significant shareholding in it.</td>
</tr>
<tr>
<td>Management buyin (MBI)</td>
<td>A buyin is similar to a buyout, expect that the management team comes from outside the company. Sometimes they have worked together previously in another company, but often the management team is put together by the PE investor.</td>
</tr>
<tr>
<td>Management buyin/buyout (BIMBO)</td>
<td>A BIMBO is a transaction in which some members of the management team acquiring the company come from its existing management, and some of them are outsiders. Quite often the new CEO will be an outsider, but will retain some of the company’s existing management team, who will also become equity investors.</td>
</tr>
<tr>
<td>Institutional buyout (IBO)</td>
<td>In an IBO, a PE firm buys the company, following which the incumbent and/or incoming management will be given the chance to buy a stake in the business. The deal is driven by the institution(s) rather than the management. Such deals may be quicker to do, because the equity provider is negotiating directly with the vendor, rather than also with the management.</td>
</tr>
<tr>
<td>Leveraged build-up (LBU)</td>
<td>Here, a PE firm acts as principal to buy a company with the intention of developing it into a larger group by making further acquisitions in a specific business area. This is also known as ‘buy and build’.</td>
</tr>
<tr>
<td>Public-to-Private (P-to-P)</td>
<td>The term refers to buying a listed company and taking it off the stock market. This transaction could be any of the above.</td>
</tr>
</tbody>
</table>

Because the financiers see themselves as investing in the management as much as in the business, a lot of attention will be paid to taking up references on the members of the management team. Such references may be from people suggested by the management team, but will also include trade and other sources, to obtain a good cross-section of views. The results of the due diligence could fall into three categories:

- due diligence shows that the management team is capable of undertaking the transaction and successfully running the business – the transaction can proceed;
Figure 17.1

The private equity deal process

- due diligence shows that the management team has a serious flaw(s) – the PE investors will probably withdraw; or
- due diligence shows that most of the management team is satisfactory, but there is one (or more) weak member. In such instances, the PE company may demand that a manager be replaced. This can put severe personal pressure on a team of people who have been working together for years, but it may be the only way to get the deal done.

(The management team should also do due diligence on the providers of capital. How good are they as investors? Are they supportive of their investments? Do they take board positions in their investee companies, or do they manage in a more hands-off way? Do you like these people, and are you prepared to be tied to them for many years? It is a mistake to go into business with people whom you dislike or do not trust – even if they do seem to be the only source of finance.)

Because they have investigated their targets more thoroughly, they are better equipped to determine the appropriate price, and also much better prepared to know how to drive value once the business has been bought.

4. Make the investment: Deal structuring is an important part of the creation of value for the PE investor, and is discussed separately in this chapter. PE companies are more aggressive in leveraging their investments than are other owners, and this, provided it is not done to excess, is one way in which they create value for shareholders.

5. Manage the investment: When selecting a PE investor one of the key matters for a management team to consider is what the investor can bring to the party. Money is a commodity, taken for granted. A PE company with industry experience and contacts can add a lot to a business. More significantly, the PE owner has much greater access to management and to the numbers than does an investor in a listed company. Also, given the illiquidity of their investment – they cannot just sell if it goes bad – they need to make it work. Accordingly,
they probably have a much greater interest than another investor, or than a remote parent company. This combination of knowledge, power and interest leads to a close relationship with the business and its management, which reduces the agency costs considerably. Add to this good corporate governance processes, a simple chain of command, and a short timescale in which decisions can be made, and there are distinct ownership advantages to PE.

6. Exit: The PE company makes most of its return on the eventual sale of the business, and so the exit is crucial. This may be in the form of a trade sale, an initial public offering, or even a secondary buyout, selling on to another PE institution. The exit will probably be planned at the time the investment is made, although changes in circumstances will obviously affect those plans. The PE company might decide to ‘twin-track’ – running a sale process in parallel with a listing application, to obtain the most suitable exit. (A trade sale is often a more attractive exit, as it enables the PE company to sell out completely; often in a listing they are obliged to hold a shareholding for a further period.)

Overall, PE investors are looking for good companies, with considerable growth potential, and good management teams to run them. Because the deal will carry a significant level of debt, the company generally needs to be cash generative, and ideally this cash generating power will be protected by some unique factors giving a competitive advantage that is not easily imitable by competitors. They will aim to make money at all stages: buying as cheaply as they can; growing the business both in top line sales and in restructuring to reduce costs; and selling well.

DOING THE DEAL

Before we look at deal structuring in depth, it is worth considering how buyouts arise, and the concerns of the various parties.

The impetus for a transaction

Management buyouts (MBO) may be undertaken for a variety of different reasons, reflecting both the holding company’s and the management’s priorities.

The holding company’s reasons might include:

- disposal of a non-core business, to regain focus
- to release funds to support the rest of the group
- to pass on a family-owned business from which the owners wish to retire.

The management’s reasons could be:

- to run the business autonomously without head office interference
- fear that the division will be closed down or outsourced unless they buy it
- prefer to run their own business than to be sold to a trade buyer.

Buyouts are sometimes driven by an ambitious management team which sees the potential for high growth of the business once it is outside the control of a bureaucratic parent. In other cases, the parent company might suggest the buyout, either as a means of releasing capital tied up in a division, to use elsewhere
in the business, or because the division has become non-core, and the group would be more focussed without it. In some instances, a buyout is undertaken because the management of the division see it as a preferable option to being outsourced or sold on to a trade buyer. For the larger, public-to-private (P-to-P) transactions, the driving force might be that management and the PE companies see the potential to make a great deal of money.

The reason driving the transaction will be an important influence on the attitudes of potential financiers and other stakeholders.

The early stages of the process

In the early stages, the process of undertaking a buyout will differ dependent on whether the deal is being driven by the management or the owners of the company.

In some ways, the situation is simplest if the owners have expressed a wish that the management team should consider a buyout. Here, the management team are free to pursue the idea as they see fit, and to contact outside parties for financial advice and possible funding, knowing that in principle the transaction will be acceptable to the shareholders.

However, if the impetus for the buyout comes from the management team, then an interesting fiduciary position arises with regard to the owners of the company. Management are paid to act in the best interests of the owners, and have a duty so to do. Undertaking a buyout may be in the owners’ interests, but it may not: they may object strongly to the proposal. Management thus have two choices: they either investigate the feasibility of a buyout before they approach the owners, or they do so afterwards.

Why should management choose to investigate the feasibility of a buyout before broaching the subject with the owners? Putting it bluntly, if they find that a deal is not feasible, they can quietly drop the idea, and life goes on as usual. The owner need never know that a buyout was being considered. Politically, this might be advantageous for two reasons. If the team were to announce to the owners that they were considering a buyout, and then fail to obtain the finance, their position in the organization could be weakened. However, if the deal is feasible, they can approach the owners secure in the knowledge that their aims are achievable, and in a potentially stronger negotiating position. The second reason for wanting to check out how the land lies is that the owners might react very negatively to any suggestion of a buyout – and it would be a waste of time (and of a potential career!) to ruin the relationship for a deal that might never happen.

The other alternative is for management to respect their fiduciary duties, and approach the owners before determining whether a deal can be done. This has the advantage of being totally above-board. However, should the owners object strongly to the idea, management are in danger of losing their jobs with no fallback position.

The legal situation will be slightly different in each case. Management teams will probably want to test the lie of the land before approaching the company’s owners, but they must be aware of a potential breach of their duties if they release confidential information (e.g. management accounts) to outside parties without the owners’ approval. Legal advice may need to be taken.
The paragraphs above make the assumption that the proposed buyout is of a division of a company. The situation differs slightly in a P-to-P deal, where the management, backed by PE, wish to acquire the whole company and take it off the market. Here, it is important that the ‘external’ shareholders are not disadvantaged, and the board of directors needs to act to protect their interests. Case study 17.1 sets out some of these issues as regards the acquisition of Alliance Boots plc in 2007.

**Advisors**

In order to complete any funding deal, the management team will need to make contact with providers of equity and debt finance. They will also need to employ professional advisors: at the very least they will need a lawyer. It is

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**PUBLIC-TO-PRIVATE: ALLIANCE BOOTS**

Alliance Boots was the first FTSE 100 company to be taken private in a PE transaction, which valued it at over £11 billion. This distinction aside, the transaction had some unusual features. Alliance Boots had been created less than a year earlier, by the £7.8 billion merger of Alliance Unichem and Boots, two chains of drugs companies and retail pharmacies. In March 2007 Stephano Pessina, the executive deputy chairman of the company, informed its chairman, Sir Nigel Rudd, that he was working with KKR on a deal to take the company private, and the initial offer would be in the region of £10 per share.

Pessina, the billionaire entrepreneur who had built up Alliance Unichem and engineered the merger, was the largest shareholder, owning about 15%. As executive deputy chairman he was responsible for corporate strategy. Furthermore, he wanted to retain the company’s existing management team. In addition, many of the board had come from Alliance Unichem, and so had previously worked for and with Pessina. Many owned shares, and could benefit from any takeover. With all of this, the potential for conflicts of interest was significant.

Once the deal was notified, Rudd, as chairman, had to act in the best interests of the other shareholders of the company. The independent non-executives had to decide whether to open the books to the bidders at the price of £10 (they did not); they also had to find advisors who were independent of any of the bidders. And the bidders had to be kept at a distance, to avoid influencing the company’s attitude to the transaction. Given Pessina’s key role in the company, this was trickier than usual: the NEDs had to evaluate the value of any potential deal, and all of the management team who might have helped with this evaluation were effectively ruled out.

The deal turned into an auction, as another PE firm, Terra Firma, also decided to bid. This drove up the price – the company opened its books to an offer of £10.40 per share and the final deal was for £11.39.

Value was created for shareholders in this deal. However, such situations often end less satisfactorily. Once senior management with a large stake have expressed an interest in taking a company private, the company’s future becomes uncertain and an offer can often be difficult to resist.

*Source: Financial Times, various dates.*
also recommended that they use a financial advisor, an accountant, or other professional involved in raising finance.

There are two good reasons for using a financial advisor. Firstly, even if the management team is very experienced in this area, they will have enough to do without project-managing the minutiae of the deal – it is useful to have an experienced agent on whom they can rely. The second reason for employing an advisor is more basic: PE and venture capital companies receive many hundreds of approaches every year from businesses needing finance, and they have to have a filtering system to sort out potentially good proposals from time-wasters. One of the most basic filters is only to consider proposals that come from professional advisors who are respected in the industry – that way the institution can assume that the advisor has done a ‘first sort’ of the plans, and that only reasonable proposals are reaching them.

This latter point often seems totally unreasonable to managers and entrepreneurs, who do not think the world should work this way, and believe that their plan deserves consideration on its merits. Quite possibly it does, but we live in the real world. Your authors know of a company whose business plan was rejected out of hand by a local venture capital company: the entrepreneur went to a financial advisor who was known in the area, and he re-badged the proposal in his company’s binder, without changing a word of it. The business plan was read, and the investment was made. Sometimes you just have to accept that life is not fair – and play by the rules the market sets.

SELECTING FINANCIERS

Different PE companies and venture capitalists have different investment criteria. For example, some will only invest in deals above £5 million, or £50 million, others might specialize in (or avoid) certain industries. The first point to note in selecting potential financiers is only to approach those who might be interested in your deal: to do otherwise is a waste of your time and theirs.

Once a PE company is on board for the deal, they will help to make introductions to other sources of finance, including bank and mezzanine lenders, and other PE companies with whom they might want to syndicate the deal. An advantage of syndicated (‘club’) deals is that they share the risk and also enable larger targets to be acquired than one PE company could afford on its own.

Sometimes, bank finance can be arranged as part of the purchase, using ‘stapled financing’. Here, the lead bank advising the vendor will guarantee to offer debt finance to the successful bidder, up to a certain amount. Although this is often not taken up (the offered terms are used as a negotiating point with other lenders), it can facilitate the transaction. Also, the level of debt offered will help anchor the parties’ expectations of the eventual deal price (which can be a good or bad thing).

If your investment proposal is very attractive to the investor community, for example, you are looking to buy a large, profitable, cash-generative company that has just refurbished all of its assets, then you may be in the fortunate position of having PE companies vie for your favours. In such cases your advisors would run a ‘beauty parade’, in which selected firms would be invited to
present to the management team to demonstrate why they should be the ones selected as lead investor.

However, for many run of the mill propositions, the situation is reversed, and the management team has to convince an investor that they are worth backing. In such cases, it is important to deal only with a few potential investors at a time.

Some management teams try to send their business plan out to all of the potential investors, in the hope that someone will express an interest in their deal. This is a poor strategy. Firstly, if there is a flaw in the business plan, it will have been exposed to the whole market, without the team having a chance to correct it. Sending the plan to just three or four firms would have given the management and their advisors a chance to understand why it was being rejected, and adjust it accordingly. The second reason that mail-shotting the market is a bad idea is that it makes you seem like a loser – if everyone could have your plan, no one will want it.

**DEAL STRUCTURES**

Structuring a PE transaction involves balancing the needs of the various parties, whilst meeting the funding requirements and capacity of the company. Three sets of issues need to be resolved:

1. What funding is needed?
2. What can the business afford? and
3. What do the parties want?

**WHAT FUNDING IS NEEDED?**

The funding to be raised will primarily comprise the purchase consideration for the business, to be paid to the outgoing shareholders. This will have been determined based on a calculation of the value of the business being acquired. As with all corporate acquisitions, that price will be a matter for negotiation between the parties.

Funding will also be needed to develop the business. PE does not normally invest in businesses unless they anticipate growth – and that growth will almost certainly require additional funding. Financial forecasts should demonstrate how much of that funding can be released from internal sources (e.g. by better management of working capital) and how much will need to be funded externally.

Finally, the massed ranks of professional advisors would be most upset were we to forget the final funding need – that of paying the deal costs. Accountants, lawyers, and other professionals will need to be paid, as will arrangement fees to financiers. As a (very) rough guide, you might expect these to total 5% of the transaction value.

**WHAT CAN THE BUSINESS AFFORD?**

Here, the main consideration is the cash impact of providing a return on finance. We have established previously that debt is cheaper than equity, and
when we discuss funding structures later you will see that these deals are financed mainly with debt. However, debt finance involves regular interest payments and a repayment schedule: the post-buyout company needs to be able to meet these requirements.

One way to evaluate a company’s debt capacity is to select a suitable level of interest cover (EBIT² divided by interest charges), and work back to evaluate the level of debt this represents. Working insight 17.2 illustrates such calculations.

Often, instead of this simple interest cover calculation the variables used for the numerator will be EBITDA, or (EBITDA less maintenance capital expenditure). The denominator, instead of the interest charge in the income statement, could be cash interest, or (cash interest plus cash debt servicing).

There is more to a company’s debt capacity than just considering the interest cover. Lenders will be interested in the level of security for their debt, and also, particularly, the ability to make repayments of principal. In this connection, companies which have easily separable assets – for example, retailers where the property can be sold and the leased back, with the proceeds being used to pay down debt – are very attractive propositions for PE deals.

Although the traditional ways of measuring a company’s indebtedness are gearing (debt/equity, or debt/capital employed) and interest cover, a commonly used ratio is Debt/EBIT. Working insight 17.3 shows how Debt/EBIT relates to interest cover.

We should also point out that although in this chapter we will just refer to ‘debt’, in practice there may be several different financial instruments used, each with different rights and priorities, interest rates and repayment terms. A tranche of senior debt, with low interest cover covenants and strong security, may be supported by senior subordinated debt, junior debt, and mezzanine, each with progressively weaker covenants and security, and carrying a greater return for the lender. Generally, and not surprisingly, larger deals have more complex debt structures.

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**WORKING INSIGHT 17.2**

**Sustainable level of debt**

BuyOut Ltd is forecasting operating profits of £140,000 in its first year of operation. The directors and the providers of finance have agreed that interest cover of 3.5 times is adequate for safety. Interest rates are 7%.

BuyOut has operating profits of £140,000

Therefore, with interest cover of 3.5 times, it can afford to pay an interest charge of £40,000.

With interest rates of 7%, this represents a capital sum borrowed of £571,400.

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2 Earnings Before Interest and Tax. EBITDA is EBIT before depreciation and amortization.
WHAT DO THE PARTIES WANT?

The main parties to a PE transaction are the management team, the providers of institutional equity and the providers of debt funding. Each has a different set of requirements of the deal.

Management generally undertake an MBO in order to become their own bosses and to get rich through an ultimate exit. There may also be an element of doing the deal in order to preserve their jobs – if they don’t buy the company it could be sold on, or closed down. Thus management’s key requirement is a large share of the equity (for control and for capital gain), and preferably a relatively low cash investment, as they are likely to have other commitments.

The PE companies are taking a risk in making this illiquid investment, and are doing so in order to make a good return. They need a suitable cash-to-cash return over the investment lifetime, often calculated as the IRR (internal rate of return). For example, they might require an IRR exceeding 25% per annum over the life of the investment, and have to believe that the deal will give them this. If the PE company plans to syndicate the deal, bringing in other PE companies...

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3 At the time of writing, Debt/EBIT ratios of more than 6 times are very common.
to take part of the investment, then the transaction terms have to be attractive to all of them. And it is worth bearing in mind that a smaller IRR on a large sum might be more attractive than a large return on a small initial investment.

The lenders have a different view again. Lending debt should be a low-risk activity – which means that they have to be able to protect their downside. Hence the lenders will require strong covenants, and security where available. They will be less interested in the deal’s potential upside (in which they do not share) than they will in protecting their position should the downside occur.4

Relationships between these parties are complex, and constantly changing during the acquisition process. For example,

- in negotiating the purchase price of the business, the vendor is pitched against the combined might of the management team, the equity investors and the banks;
- in negotiating the banking terms, the PE firm and management team are up against the banks;
- in negotiating the equity split, the PE investors are now on the opposite side to the management team;
- individual members of the management team may each be defending their own corner when it comes to negotiating equity terms and employment contracts.

The various rights and obligations of the parties will be spelled out in, for example, the sale and purchase agreement; the new company’s internal constitution; shareholders’ agreements; the loan agreements; and employment contracts for the directors and key staff.

**STRUCTURING THE DEAL**

With these constraints in mind, deal structuring can be simplified to a series of steps, as follows.

1. Determine how much finance is needed. This should be the total finance: sufficient to cover the deal price, working capital requirements, future cash requirements, and deal fees.
2. Ascertain how much of that finance can be taken as debt. Debt is a cheaper form of finance than equity, and the gearing of the deal will affect the equity returns, as demonstrated later. The level of debt will depend on the asset backing of the business, and the amount and quality of its cash flow generation.
3. Determine how much funding the management will be able to put in. Investors will generally expect this to be at least 1 year’s salary, often more.

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4 During the private equity boom of the mid-2000’s, so-called ‘cov-lite’ loans became common. As the name implies, so keen were the banks to participate in these deals that these loans carried very few covenants. Earlier in this book we defined debt as a low-risk instrument which has another way out. By lending with few covenants, banks were taking more risk than the return appeared to justify.
4. Knowing the total funding needed, the level of debt, and management’s contribution, the balancing figure normally has to be supplied by the PE institutions. This will be split between ordinary and preference shares, as shown below. Factors to consider here are the percentage of equity that management will have in the business, and the prospective IRR on the institutional investment, payment terms, the dividend on ordinary shares, etc.

Working insight 17.4 sets out the deal parameters from which we will build a possible financing structure.

The total financing for MaMBO’s deal is £12 million. As stated earlier, the first part of the finance to be evaluated is the new company’s debt potential. Working insight 17.5 illustrates this calculation.

---

**Financing structure for an MBO: Initial parameters**

The management team of MaMBO is putting together an MBO from Parent, their holding company. They have approached a PE company, PE-Co, which has agreed to lead the deal. PE-Co has discussed the deal with BestBank, which is leading the debt.

Deal statistics are as follows.

- The parties have agreed a purchase price of £10 million to be paid to Parent.
- A further £2 million is needed to fund working capital requirements and deal costs.
- MaMBO is expected to make operating profit of £1.5 million in the first year of operating after the deal. (This is considerably higher than the company is doing now, but the management will be able to operate more efficiently (and with more enthusiasm) once they are freed of the dead hand of group bureaucracy.)
- BestBank has stated that it will lend at 8%, and has demanded a covenant that interest cover will not fall below 3 times for the first year. They have also set a gearing covenant, that debt will never exceed 50% of total funding.
- The management team between them are investing £200,000.

---

**Debt capacity in an MBO**

The bank funding is firstly limited by the interest cover covenant:

<table>
<thead>
<tr>
<th>Forecast operating profit</th>
<th>£1.5 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest cover (min)</td>
<td>3 times</td>
</tr>
<tr>
<td>Therefore, maximum interest charge</td>
<td>£500 k</td>
</tr>
<tr>
<td>At 8%, this equates to borrowing of</td>
<td>£6.25 million</td>
</tr>
</tbody>
</table>

However, the gearing covenant will supersede this, as debt can not exceed 50% of total funding (of £12 million).

This equates to a borrowing of £6 million.
Of the £12 million needed for the buyout to go ahead, debt will provide no more than £6 million. This leaves equity sources to provide a further £6 million. We were told that management will put in £200,000; thus the finance from PE is £5.8 million. The next issue to consider is the form this finance will take.

**Determining the equity split**

In determining how the institutional investment is made, there are several possibilities. The most obvious solution is for management and the institutions to invest on the same terms. Working insight 17.6 illustrates this for MaMBO.

MaMBO has £6 million of equity finance, of which management is putting in £200,000. If shareholdings are split in these proportions, management will obtain 200/6,000 of the equity – 3.3%. It is unlikely that they will see 3.3%, split between the members of the team, as sufficient incentive to invest their life savings and work in the business for 25 hours a day for several years.

Therefore a method has to be devised to give management proportionately more of the equity than their money alone would deserve.

This could be done by differential pricing, by which the different classes of investor pay different prices to invest. Working insight 17.7 sets out a possible solution on this basis.

The position set out in Working insight 17.7 seems to meet the needs of the situation, in that the company has the funding it requires, and management

### Institutional investment on management terms

<table>
<thead>
<tr>
<th>Investment by management</th>
<th>£200,000 (3.3%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment by institutions</td>
<td>£5,800,000 (96.7%)</td>
</tr>
</tbody>
</table>

### Structuring the MBO using differential pricing

Assume that the management team buy their ordinary shares at £1 each, but the institutions pay £7.25 per share.

<table>
<thead>
<tr>
<th>Investment</th>
<th>No. of shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management at £1</td>
<td>£200,000</td>
</tr>
<tr>
<td>Institutions at £7.25</td>
<td>£5,800,000</td>
</tr>
<tr>
<td>Total</td>
<td>£6,000,000</td>
</tr>
</tbody>
</table>

Management now owns 20% of the company’s equity, which they would probably see as a worthwhile investment for their trouble.
have an acceptable percentage of the equity. However, as is often the case with simple solutions, there is a catch. What if a trade buyer comes along the next day, offering to buy the company for £12.5 million (including the debt)? Once the debt is paid off, that would leave £6.5 million for the equity – a profit of £500,000 in a day! However, £6.5 million for the equity works out at £6.50 per share. Management will be delighted – they bought in at £1 per share, and can make a huge capital gain. However, the institutions bought in at £7.25 per share, and would not be prepared to sell out at £6.50. So immediately we have a conflict of interest, and a very frustrated management team.

Differential pricing can easily lead to such conflicts of interest, which is one reason why it is best avoided. To overcome the problem of giving management sufficient of the equity to make it interesting, the deal can be instead structured using another instrument such as preference shares or subordinated debt to ‘gear up’ their stake. The way that preference gearing works is that the institutions put in their funding in two separate instruments – ordinary shares and preference shares. This is illustrated for MaMBO in Working insight 17.8.

In Working insight 17.8, the institutions invest £800,000 in ordinary shares at £1 each, and £5 million in preference shares. Management will own 20% of the company. Any future buyer of the company would have to pay off the preference shares first (at par), with the balance of sales proceeds being split in proportion to the numbers of ordinary shares. This would lead to a situation in which the institutions and management are on the same side. Working insight 17.9 completes the example with the full deal structure and exit calculations.

Based on Working insight 17.9, who has obtained what out of the deal?

Management invested £200,000 and obtained £1.2 million – an absolute gain of £1,000,000. This is an IRR of 145% – an excellent deal!

The institutions put in £5.8 million (£5 million preference capital and £800,000 equity) and obtained £9.8 million – an absolute gain of £4 million, which represents an IRR of 30%. This IRR would be increased by the annual dividends

<table>
<thead>
<tr>
<th>Equity</th>
<th>Investment</th>
<th>No. of shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management at £1</td>
<td>£200,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Institutions at £1</td>
<td>£800,000</td>
<td>800,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£1,000,000</strong></td>
<td><strong>1,000,000</strong></td>
</tr>
<tr>
<td>Preference shares</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutions</td>
<td>£5,000,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£6,000,000</strong></td>
<td></td>
</tr>
</tbody>
</table>
Rewards on exit

Assume that the initial deal is as set out in Working insight 17.8. Two years later, an offer is made to buy the company (including the debt) for £15 million. This reflects the considerable improvements that management has made to the company’s trading position. £2 million of the debt has been repaid since the deal was originally done.

<table>
<thead>
<tr>
<th></th>
<th>Initial deal</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance required</td>
<td>£12,000,000</td>
<td>£15,000,000</td>
</tr>
<tr>
<td>Sales proceeds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less debt</td>
<td>6,000,000</td>
<td>4,000,000</td>
</tr>
<tr>
<td>Management and institutions</td>
<td>6,000,000</td>
<td>11,000,000</td>
</tr>
<tr>
<td>Less preference capital</td>
<td>5,000,000</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Equity funding/return</td>
<td>£1,000,000</td>
<td>£6,000,000</td>
</tr>
<tr>
<td>Equity investment/return</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management (20%)</td>
<td>£200,000</td>
<td>£1,200,000</td>
</tr>
<tr>
<td>Institutions (80%)</td>
<td>£800,000</td>
<td>£4,800,000</td>
</tr>
</tbody>
</table>

on their preference shares. The institutional return is nowhere near as much as management’s, but it’s quite respectable in terms of their original requirements from the deal.

The decision as to how much of the institutional capital goes in as ordinary shares and how much as preference shares is crucial in the deal structuring, as the preference gearing is what gives the management its excellent return. As with everything, the level of preference gearing is a matter for negotiation: the more the institutions want to do the deal, the more generous their offer to management.

One figure which is used to determine how generous, or otherwise, the institutions are being is known as the *envy ratio*. This is most easily explained by example, as shown in Working insight 17.10. The higher the envy ratio, the better the deal for management.

**Tweaking the terms**

Sometimes it can be difficult to meet the conflicting needs of management, the institutions and the lenders. For example, if the lenders will only lend a small proportion of the deal funding, then equity must be found to make up the

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5 We have shown gearing in preference shares. One often sees this funding structured as a subordinated loan; the gearing impact is the same, and the loan interest is tax-deductible, making it cheaper. However, some tax authorities are querying this structure, arguing that the loans are debt in name only, and are really a form of equity, for which the yield payment should not be tax-deductible.
balance. If management are putting in relatively little, the institutions have to make up the balance, and it can be difficult to give management a high percentage of the equity whilst still obtaining a high IRR for the institutions. There are two possible ways around this – paying dividends to the institutions, and using a ratchet.

**Dividends** One way to meet management’s desire for a higher percentage of the equity is for the institutions to increase their potential IRR by taking a dividend return as well as a capital gain on exit. The ongoing dividend return (normally taken on the preference shares) will improve the institutions’ IRR without, we hope, restricting the company’s ability to grow. Working insight 17.11 illustrates this for the MaMBO deal.

### Illustration of envy ratio

For the MaMBO buyout the institutions put in a total of £5.8 million for ordinary and preference shares, and ended up with 80% of the equity. Management put in £200,000 and ended up with 20% of the equity. This ‘values’ the company as follows:

From the institutions’ point of view: £5.8 million / 80% = 7.25 million (A)

From management’s point of view: £0.2 million / 20% = 1.0 million (B)

Envy ratio (A/B) = 7.25 times

### Institutional return

In the MaMBO buyout, the preference shares carry a dividend of 7%, payable at the end of each year. The PE cash flows (ignoring tax) are as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£million</td>
<td>£million</td>
<td>£million</td>
<td>£million</td>
</tr>
<tr>
<td>Investment:</td>
<td>Preference shares</td>
<td>(5,000)</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>Ordinary shares</td>
<td>(800)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preference dividend</td>
<td></td>
<td></td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Capital repayment</td>
<td>Preference shares</td>
<td></td>
<td></td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>Ordinary shares</td>
<td></td>
<td></td>
<td>4,800</td>
</tr>
<tr>
<td>Annual cash flow</td>
<td></td>
<td></td>
<td>(5,800)</td>
<td>350</td>
</tr>
<tr>
<td>IRR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dividends can also be used as a tactic to ensure that the institutions do actually get their exit. In a company which is known to be cash generative, the dividend terms might be set such that the institutions’ ordinary shares (or sometimes all of the ordinary shares) receive an extra dividend that starts at, say, 10% of distributable profits but rises annually by 5% or more. The payment of such a high dividend can be used to focus management’s mind on the possibility of an exit – to realize their potential capital gain before the institutions have taken it all out by way of dividend! Even if there isn’t an exit, the institutions still get their high IRR through the yield.

**Ratchets** There are times when management and the institutions cannot agree about the future prospects of the business. Management want a high percentage of equity, believing that the company will do incredibly well. However, the institutions might argue that there is no guarantee that the company’s performance will improve, and so they need a high equity stake to ensure their return. A ratchet can be the answer.

A ratchet is a device that enables the proportion of equity held by management to be altered depending on what profits the company achieves (or depending on any other variable specified). A *positive ratchet* starts management at a low equity percentage with the incentive that should they perform well their percentage will be increased. A *negative ratchet* starts them at a high equity percentage, but they will have to forfeit some shares if the company does not meet its targets.

*Warning:* ratchets solve the immediate problem of resolving the conflict between the parties at the commencement of the deal. In many cases they lead to even greater problems in the future when the ratchet is (or is not) triggered. They can also drive short-termist behaviour that is not in the best interests of creating long-term shareholder value.

**IMPROVING RETURNS WITH MORE LEVERAGE**

In the example above we have shown a simple deal, with an initial deal structure, improvements to the company, and a sale a couple of years later having paid down some of the debt. However, the PE company has had to wait until the ultimate exit before it makes its gain. A common way to bring forward that gain, and to improve it considerably, is to undertake a leveraged recapitalization.

In a leveraged recapitalization the cash flow that the company has generated during its PE ownership is used to pay a large dividend to the owners, and more debt is taken on to refinance the company. This often happens very quickly, with cash being generated by selling off unwanted assets. The early dividend payment will greatly improve the PE company’s IRR; indeed, it can mean that the whole investment is repaid after a relatively short period, and the PE company still retains a substantial percentage of a profitable business. Case study 17.2 illustrates an extreme example of this.
Because an early leveraged recapitalization can have such an extreme effect on increasing the IRR of a deal, many PE investors prefer to evaluate transactions on the cash-to-cash return, the multiple of cash out to cash in. They see this as a more meaningful measure of how well they have done. Working insight 17.12 illustrates.

**ANOTHER VIEW OF PRIVATE EQUITY**

The PE industry has long been regarded with suspicion by some elements of society, and during the mid-2000s this critical voice became stronger. There are undoubtedly ethical considerations involved in PE financings, and we set out a brief overview of these in the following paragraphs.
**Excessive use of debt:** One of the means by which the PE companies make their return is by gearing up the investee companies. This means that the majority of the returns fall to the equity providers. However, very high gearing is often associated with company failure. If the investee company is too highly geared the PE investors, who are diversified, are forcing the undiversified employees (who only have one job) to take inappropriate risks with no additional payoff. This applies in the initial structuring of the deals, and in particular to the leveraged recapitalizations which are commonly seen.

**Societal impact of restructuring:** Another complaint about PE ownership is that PE-backed companies restructure – a euphemistic term for making a lot of the workforce redundant. It is argued that this improves operating returns, but at a wider cost.

As authors, and as one-time market participants, we have mixed views about the two arguments set out above.

It is undoubtedly true that some PE-backed companies are over-geared. An example of a buyout that failed due to taking on too much debt was Focus, one of the UK’s leading DIY chains. The high levels of debt were said to have constrained Focus in its expansion plans. The company was sold in 2007 to another PE investor for a token £1, and although senior debt was paid off in full, the bondholders only received 40 p in the £.

However, we have spent much of this book pointing out that debt is cheaper than equity, but that debt should be used appropriately to the company’s needs, its business risk, and the stage in its life cycle. If debt is used appropriately, then it provides advantages to all, without making the business significantly riskier. Likewise a leveraged recapitalization, provided that it does not damage the interests of other stakeholders (particularly employees and pension funds) is not particularly evil. It is only when gearing is excessive, and done with disregard to the valid interests of other parties, that it becomes a problem.

The point raised regarding the impact on the workforce of restructuring is one that is contested by participants in the PE industry, and we have no wish to get drawn into that debate. We would point out that a company that is run inefficiently is unlikely to survive in the longer term, and so value can be created, for many parties other than the PE investors, by trimming unnecessary costs. However, making cuts just for short-term profit improvements is unlikely to generate value overall and so is not recommended.

**Impact on the capital markets:** A final argument made against the PE companies is the detrimental impact that P-to-P transactions are having on the capital markets. When management takes a company private and then re-floats it a few years later at a higher value, it can leave a sour taste in the mouths of the institutional investors who had no alternative but to sell cheap, and are now being asked to buy back the same shares at a higher price. This has led to debates about management’s conflict of interest, and the leakage of price-sensitive information to a variety of parties. At the time of writing, various formal and informal processes are underway to address this; for example, we are seeing some transactions where the existing shareholders retain a stake in the PE-backed business (known as ‘stub equity’), and so have some participation in the ultimate gains, should there be any.
KEY MESSAGES

- PE is the investment of equity outside a public stock market, in larger transactions. It has played an increasing part in corporate transactions over the past decade.
- PE companies can raise their money from the stock markets. However, it is more common that they raise independent funds, or are ‘captives’ of other financial institutions.
- In order for PE to play a part in the economy the supporting infrastructure must contain the other players, such as experienced bankers, financiers, and professionals. In addition, the legal and regulatory systems must be strong enough to reduce the perceived risk of investors.
- PE transactions include MBO and buyins, plus various other forms of deal where the ownership of a company changes hands. Often they involve a listed company becoming privately owned.
- PE transactions are usually highly geared. Investors make their returns from this gearing, and also from taking a close interest in managing the businesses, and a reduction in agency costs.
- In addition to the gearing of the transaction with several classes of debt, the PE investment itself will be geared up in order to increase management’s relative stake in the business. This is often done by using preference shares as part of the financing structure.
- Advantages claimed for PE investors include a reduction of agency costs due to the closeness of the investor to the management and operations of the company. They have the opportunity to add value at every stage of the investment: finding a suitable transaction, evaluating it through due diligence, negotiating and financing the deal, running the business, and the eventual exit.

KEY TERMS IN THIS CHAPTER

- Buy and build
- Captive
- Carried interest
- Cash-to-cash return
- Covenants
- Dividends
- Due diligence
- Envy ratio
- Exit
- Fiduciary duty
- Gearing
- Governance
- Internal rate of return (IRR)
- Leveraged build-up
- Leveraged buyout (LBO)
- Leveraged recapitalization
- Management buyin (MBI)
- Management buyout (MBO)
- Preference gearing
- Private equity
- Public-to-private (P-to-P)
- Ratchet
- Secondary buyout
- Stapled finance
- Stub equity
- Syndication
OVERVIEW

In international corporate finance we face all of the complexities of the domestic variety, together with additional issues relating to dealing with foreign cultures, satisfying different stakeholders, and managing foreign exchange risk.

This chapter briefly discusses the reasons that companies may wish to make overseas acquisitions, and then focuses on the mechanics of how these deals might be found, and the pitfalls involved in completing the transaction, and in running the company thereafter. The method of paying for the business is also considered – which currency should be used, and should the finance be raised in shares or debt?

Within the chapter, the discussions are informed by considering three types of foreign exchange risk – transaction risk, translation risk, and economic risk.

INTRODUCTION

As someone once said, the world is becoming more global every day! Certainly, business is increasingly conducted on a global scale, and companies need to understand the implications for their business and financial strategies.

We have already explained that a detailed exposition of business strategy is outside the scope of this book; our remit is to explain financial strategy. Accordingly, in this chapter we will not venture into the ‘whys’ of investment overseas, but will instead focus on its financial aspects. We will assume that someone else has done the detailed analysis that concludes, for example, that:

- we have exhausted the growth potential of our local market, and international expansion is a more rational strategy than diversification; or
- it is more cost-effective to have operations in (name your country/region) than it is to continue to produce here and export to them; or
- our main competition is coming from this part of the world, and it would be strategically beneficial to move into their territory; or
- we need a presence in this trading bloc in order to be able to compete here without trade restrictions; or
- we need to expand into this territory before our competitors do, to gain first mover advantage in this expanding market.

Or any one of a multiplicity of good strategic reasons for overseas expansion or acquisitions.

In this chapter we will focus mostly on international finance in the form of acquisitions, rather than start-up greenfield sites or joint ventures. However, much of what we say is relevant to all international situations, including instances where a company is seeking foreign investment in itself.

SO, WHY IS ‘INTERNATIONAL’ DIFFERENT?

Why is ‘international corporate finance’ different to the domestic variety? Well, other than the fact that it’s harder and riskier, the answer is ‘it isn’t’! All of the principles set out in this book will apply to your international business in the same
way as to your domestic business: the financial strategy should be tailored to the
business strategy; levels of gearing and dividend payment should reflect the busi-
ness risks; etc. However, on top of that there are various other issues to consider,
such as the currency implications for the deal itself and for ongoing ownership
of the subsidiary; different legal and tax regimes; and divergent cultural values
which may affect the success of a transaction.

The rest of this chapter sets out these issues in the context of making an over-
seas acquisition – and making a success of it.

**FINDING AN ACQUISITION TARGET**

Once a company’s strategic priorities are determined, the requirements for an
acquisition target are known. But knowing what you want and knowing where
to find it are two different matters. In some countries, such as the UK, company
information is widely available, and there are many different ways to conduct an
acquisition search. However, in other jurisdictions, different norms apply.

When conducting an acquisition search in a foreign territory a company will
almost certainly need to find trusted local advisers who understand the mar-
ket. Publicly available information on targets may be limited, which makes the
dynamics of pre-bid due diligence more complex (particularly in a hostile bid
situation). Corporate governance rules, codes, and practices will be different.
There may also be local regulations and cultural norms which would restrict an
outsider from outright purchase of a local business, even if one could be found.
All these issues need to be addressed by experts who understand the local cor-
porate and market environments.

**DOING THE DEAL**

Once a target has been identified, the acquisition must be completed. Specific
‘international’ issues to consider during this process include:

- Negotiation strategies.
- Legal context.
- Availability and interpretation of information.
- Pricing difficulties.
- Competition regulations.

Global deals are inevitably more complex than local ones. Entering into negoti-
ations with someone from a different culture involves understanding their stance
on the negotiating process; appreciating their cultural norms; and (preferably)
knowing something of their language. It sounds self evident, but business people
sometimes overlook the fact that, for example, transactions with North Americans
must be handled in a very different way to those with the Japanese, who are dif-
ferent again to Thais or to Chinese business people. And of course individuals
will have their own stances: a Chinese national who has never left China will
have a totally different approach to one with an MBA from a university in the US.

The legal context in which the acquisition takes place must also be fully under-
stood. For example, when buying a business in one’s own country one generally
understands, to some extent, the issues surrounding intellectual property rights, environmental liabilities, or employee consultation practices. In a foreign environment, each of these – and a thousand other things – could differ widely from preconceptions. Furthermore, takeover regulations differ widely among countries, and hostile bids in particular may be difficult or impossible in some parts of the world.

Information sources too could be a problem. As already stated, in some jurisdictions access to public information may be limited. But even if the information is published, or if private access is given, the information needs to be understandable. Just as an example, accounting regulations in Japan are very different to those in the UK: what does the profit reported by your Japanese target actually represent? It is always useful in these circumstances to employ professionals to re-state the target’s financial information using the accounting policies acceptable in the acquirer’s home territory – to see if the deal is actually worth doing.

Problems in understanding the financial information will obviously affect the deal pricing, but other issues too will be relevant here. In making local acquisitions, companies generally understand their local market and, in the UK and US at least, can find a lot of comparative information about previous deals, so that they can price their proposals comparative to the market. In some countries, markets have low liquidity and are not efficient, so market comparisons may be misleading. Furthermore, data on private company deals may not be available, so the potential acquirer is left operating in an information vacuum.

A further issue, of major concern, is the attitude of regulators and competition authorities. Making a major acquisition in their territory may trigger an investigation which could delay the transaction for months or years, or change its form. The Financial Times (2 July, 2001) quoted a lawyer involved in the merger of Pechiney (a French company) and Algroup (Swiss) as follows: ‘Alcan looked at 43 jurisdictions where they had overlaps, filed in 16 of those, in 8 different languages, employed 35 different firms of solicitors and had to respond to a variety of different information requests, one of which alone led to the provision of 1 million e-mails from a single office in one agency’.

Of course, we should point out that these problems can occur even in an apparently domestic transaction. In 2001 the acquisition of US company Honeywell by US company GE was terminated when the European Union competition authorities could not be satisfied as to its competitive effects in their jurisdiction.

International transactions will also result in problems for companies in managing the inevitable exposure that arises to a foreign currency(ies). Accordingly, before we discuss how deals can be financed we will consider the sources of foreign exchange risk, and how such risks can be mitigated.

FOREIGN EXCHANGE RISK

Foreign exchange risks relate to the potential for currency movements to impact on the firm. The issues we need to consider are:

- What foreign exchange risks arise due to overseas acquisitions?
- How can these risks be mitigated?
- Is it worthwhile to mitigate the risks?
Two matters need to be addressed in dealing with currency issues in an international acquisition: the exposure relating to the deal funding, and the exposure relating to the ongoing operation of a foreign subsidiary. These are both considered in the paragraphs below.

To put it simply, foreign exchange risk can come in one of three flavours: transaction risk, translation risk, and economic risk.

**Transaction risk** is the risk that arises from undertaking transactions in a foreign currency. It is most easily explained by example, as in Working insight 18.1.

**Translation risk** arises from the need to translate all transactions and balance sheet items into domestic currency for the purpose of preparing the holding company’s financial statements. Translation risk, sometimes known as ‘accounting risk’, does not have an immediate cash effect. However, its impact on the financial statements can be considerable, and, for example, this could affect a company’s ability to meet banking covenants. Accordingly, companies may wish to structure transactions so that the balance sheet asset of, say, a dollar investment in a subsidiary, is at least partially ‘hedged’ by the dollar liability of funds raised to make that investment. In such an instance, any appreciation or depreciation in the £/$ rate would affect each side of the balance sheet, reducing to some extent the impact on the financial statements. (This issue is considered again later in this chapter.)

**Economic risk** relates to how a company’s value (the present value of its future cash flows) might change due to exchange rate movements. This can occur directly or indirectly. An example of a direct risk would be a change in the currency value of sales remittances or a dividend stream receivable from an overseas subsidiary. But indirect economic risks are also relevant. An example of this was seen by Volkswagen, the German car manufacturer, as shown in Case study 18.1.

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**Example of transaction risk**

UKCo enters into a contract to sell services to FrenchCo for €12,000. The current exchange rate is £1 = €1.50. By the time the debt comes to be paid, the rate has become £1 = €1.60.

The original value of the sale to UKCo was €12,000/1.5 = £8,000

However, the depreciation of the euro means that the sterling amount finally received by UKCo is €12,000/1.6 = £7,500

By pricing its deal in euros the company has accepted the transaction risk, and has lost on the exchange rate movement.

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1 This is a very basic introduction to a complex subject. Readers who wish to know more should invest in one of the specialist books in this area, such as *Multinational Finance*, by Adrian Buckley, published by Prentice Hall (2003).
Foreign currency movements can be hedged in several ways, for example, by taking out a forward contract or by using a foreign currency option.

A forward contract fixes the rate of exchange for a future delivery of a specified sum of money. Such a contract is binding on both parties, which limits the company’s flexibility: as well as removing the downside risk of the exchange rate moving against the company, any upside potential is also lost.

The purchase of a foreign currency option, as with any option, gives the buyer the choice as to whether to exercise the option when the actual payment/receipt becomes due. The option contract can be used to establish a minimum rate which will apply to the foreign exchange transaction, so that the option premium (the purchase price of the option contract) should be regarded as a kind of insurance cost. If the actual rate of exchange is better than the option exercise rate, the option can simply be allowed to lapse and the foreign currency can be traded in the normal spot market.

Thus exchange rate movements can be financially managed, but how relevant is this to an overseas acquisition? There are several problems in practically applying the hedging possibilities:

1. The future cash flows which are going to be generated by the foreign acquisition are not known with certainty so that it is not obvious what amounts of hedging cover should be purchased.
2. Some at least of these future cash flows may be reinvested in the acquired business and therefore will not actually be converted into the buyer’s local currency. This highlights a real problem because for reporting purposes it is not the cash flows which should be hedged but the profits of the overseas business, since these will be consolidated into the group’s home currency-based published financial statements. It is by no means unusual to find that an overseas subsidiary may have increased its local currency-denominated profits compared to the previous

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**CASE STUDY 18.1 VOLKSWAGEN – HEDGING FOREIGN EXCHANGE RISK**

Volkswagen, the German car manufacturer, had most of its operating costs in euros, whilst a substantial portion of its revenues were in US dollars. Between 2002 and 2004 the euro had appreciated considerably in relation to the dollar. The company could not increase selling prices, as this would make it uncompetitive against other automobile companies not facing these euro cost pressures. This meant that Volkswagen was receiving proportionately less per car, and its profits on US operations were much reduced.

In order to hedge this exposure, Volkswagen bought forward contracts for euros. This meant that losses in revenue on any further euro appreciation would be offset by gains on the currency contract (and vice versa). The company substantially increased the level of this type of hedge between 2004 and 2005.

However, such hedging is not a good long-term strategy against exchange rate movements. Accordingly, Volkswagen shifted some of its production facilities to the US, providing a long-term natural hedge.

*Source: Economic Report of the President, www.whitehouse.gov*
year but, if exchange rates have moved adversely between the 2 years, the impact on the group’s consolidated results may be to show a decline in performance.

3. Forward exchange rates, at which these fixed future contracts would be agreed, are not designed to be forecasts of where the actual spot rate of exchange will be on that future specified date. Because of the way international financial markets work, the forward rate of exchange is always the current rate of exchange adjusted by the difference in interest rates between the two countries. As illustrated in Working insight 18.2, if this were not the case an arbitrageur could make a guaranteed profit by borrowing in one currency and investing in the other. Such investment actions would force the forward rates of exchange to change in order to close off such arbitrage profit opportunities.

However, the most important problem in trying to manage the currency risk is that it is hoped that the acquisition will continue to produce foreign currency inflows for the foreseeable future and, quite clearly, trying to hedge uncertain amounts of foreign currencies for an unknown period will become both practically difficult and increasingly expensive.

Because it is effectively impossible to hedge operating cash flows using forward or option contracts, companies may consider other forms of hedge. They may examine whether an alternative financing strategy can be used. As suggested earlier, some companies try to reduce the currency risk by using a source of financing for the acquisition in the same currency as the ensuing income stream. For example, if debt funding were appropriate for the particular deal, the borrowings could be raised in the same currency so that only the remaining

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**WORKING INSIGHT 18.2**

**The arbitrage view of forward exchange rates**

Using an extreme example to illustrate the point, suppose that the spot rate of exchange is £1 equals $2 and the annual rate of interest is 15% in £s and 5% in $s.

An arbitrageur could borrow funds in US dollars, convert them into £s sterling and deposit them at the higher rate. In order to guarantee the repayment of the US-based loan, the £s sterling receipts could be sold forward at a guaranteed rate to produce US dollars. Unless the forward rate reflects the difference in interest rates, the arbitrageur could generate a guaranteed profit! The forward rate should be $1.826:£1.

Arbitrageur borrows $100 million at 5% for 1 year.

This is converted into £50 million at spot rate of $2:£1 and deposited at 15% for 1 year.

The interest income on the deposit will be £7.5 million.

Therefore in 1-year’s time £57.5 million will be held but a liability is also outstanding of $105 million (principal plus interest on the loan).

If the forward rate of exchange is $1.826:£1, the proceeds of the deposit just repay the loan and no arbitrage profit is available.
profit stream of the foreign acquisition would need to be converted into the parent company’s own currency. At first glance this would appear to reduce the financial risk associated with the overseas acquisition but this is not so obvious when the driving forces of exchange rate movements are taken into consideration.

Over time, exchange rates must reflect the relative purchasing powers of the respective currencies. If this were not true it would be possible to make long-term profits by the physical movement of goods between countries. In the short term, this stable equilibrium position may be disturbed by government interference in interest rates or trade flows, but in the long term this concept, known as purchasing power parity, will hold.

Purchasing power parity means that over the long term, exchange rates will move to adjust for differences in inflation rates between any two countries, since this differential inflation will distort the nominal prices of comparable goods. However, interest rates and equity funding costs also include inflation, and so the costs of funding should also be different in these countries if the inflation rates differ. This should result in the source of funding for an international acquisition making no difference to the long-term financial return, as is illustrated in Figure 18.1.

The example in Figure 18.1 shows a UK-based investment opportunity spotted by a US-based company many years ago (when the rate of exchange was $4 to £1). The investment needed is £250 million and it was expected to generate a return of 20%, which showed a good super profit as the risk-adjusted cost of funds to the US-based investor was 10%.

**Figure 18.1**

Long-term exchange rate movements (purchasing power parity)

<table>
<thead>
<tr>
<th>USA company</th>
<th>$1 billion investment – cost of funds 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expected return at 20% less Cost of funds 10%, that is, Super profit $100 million per annum.</td>
</tr>
<tr>
<td></td>
<td>(a) Fund using US dollars converted at spot rate $4:£1</td>
</tr>
<tr>
<td></td>
<td>Repatriation of profits £100 million at $2=$200 million $2:£1</td>
</tr>
<tr>
<td>UK acquisition</td>
<td>£250 million – project return of 20%</td>
</tr>
<tr>
<td></td>
<td>Produces UK profits at 20% but on inflated sales prices (that is, doubled relative to US levels)</td>
</tr>
</tbody>
</table>
This project could be funded by converting $1 billion into £s sterling at the spot rate of exchange and then repatriating the actual profit streams as dividends. However during the life of the project, the rate of exchange moved steadily to $2:£1 from its initial point of $4:£1. If purchasing power parity were performing properly, this would not affect the return to the investor because, as is shown, the UK-based profits should have increased due to the higher inflation which has caused the decline in the rate of exchange. In other words, as the rate of exchange halved, prices should have doubled in the UK, relative to the US. As long as the company had maintained its UK profit margins, it should have achieved double the expected sterling profits (£100 million rather than £50 million) and this would convert into the originally expected $200 million. Hence the expected super profit is achieved despite the change in exchange rate, as long as the exchange rate movement is caused by inflation differences and the locally based business maintains its profit margins.

However, instead of using US dollars to fund the whole investment, part of the financing could be raised locally. This would hedge some of the translation (accounting) exposure, but would it affect the economic risk? Figure 18.2 illustrates what happens if 50% of the funding is injected locally and the other 50% by converting $500 million at the spot rate of exchange.

In Figure 18.2, the changed source of funding does not affect the operating profits produced by the UK business, but the business now has to bear financing costs on the locally sourced funding. As inflation in the UK is much higher (in this example) than in the US, these funding costs will also be higher (20% rather than the...

![Figure 18.2](image-url)
10% in the US). Therefore the £100 million operating profits will be reduced by £25 million (representing a 20% financing cost on the local funding of £125 million). This leaves £75 million which is available for repatriation by converting it at $2:£1 into $150 million. Since the US-based funding is now only $500 million this only absorbs $50 million of financing cost, so that there is still a super profit of $100 million on the project even though the financing structure has changed significantly.

The example illustrated in Figures 18.1 and 18.2 shows that if exchange rates do move to reflect differences in inflation rates, which must happen in the long term, the international sourcing of finance does not affect the return achieved on any cross-border investment. However, purchasing power parity is a long-term issue. In the real world (the one not inhabited by theoretical economists) there will be long time lags in exchange rate adjustment. As costs of funding and exchange rate movements do not necessarily always reflect differences in inflation rates in the short term, there will be many occasions when the source of financing can make a difference to the performance of the cross-border investment. Thus hedging these potential differences can make sense for a company if it is particularly concerned about its short-term perceived (i.e. accounting) performance.

This helps to explain why many more companies operate sophisticated hedging strategies for their short-term international trading cash flows, but do not take out any hedges relating to the longer term balance sheet exposures which they create by holding overseas assets.

**FINANCING THE DEAL**

In Chapter 15 we discussed acquisition finance and stated that there were two basic methods: offer the target’s shareholders an equity stake in the acquirer, or offer them cash. In an international transaction, it may not be possible to offer an all share deal, or even a deal for which only part of the consideration is in equity.

There are two potential reasons for equity-based deals to present problems in an international transaction. The first is that regulations may prevent it; in some jurisdictions, nationals are forbidden from owning shares in foreign companies. The second reason is that the shareholders themselves may be uneasy with the idea of changing the ‘paper’ in a domestic company they know for paper in a company with foreign domicile, whose laws and tax regulations are unclear to them, and in which dealing in the shares, on a foreign stock exchange, will be unfamiliar, and possibly expensive.

Thus the financing for international acquisitions can be carried out by:

1. raising equity on the home market, and using the proceeds to pay cash to acquire the target;
2. raising debt, and using the proceeds to pay cash to acquire the target; or
3. issuing shares tradable in the target’s country, which will be an acceptable currency for shareholders.

The first of these possibilities, financing the transaction by raising equity on the home market, has been considered at various times through this book. The decision as to whether to finance the acquisition through raising debt or equity
is similar to any investment financing decision, and is not pursued further in this chapter. (Although we would point out that, almost by definition, expansion into a foreign territory will increase business risk, and companies may wish to strengthen their equity base to compensate.)

The second possibility we suggested was to raise debt and use the proceeds to acquire the target. Again, the question of whether or not to raise debt is addressed elsewhere in this book; what is of interest here is where to raise the debt. Although companies always have a choice of markets and currencies for their debt finance, the decision becomes more immediate in an international transaction, as discussed earlier in this chapter.

**RAISING LOANS IN A FOREIGN CURRENCY**

The discussion of foreign exchange risks did, we hope, give you some idea as to why companies might wish to raise acquisition funds in a currency other than their own. Should they choose so to do, it is important to understand that entering into such a transaction itself creates a currency exposure.

For example, if a UK company raises funds in dollars, it will need to make interest and capital repayments in that currency. If the company has a dollar income stream from its subsidiary, that is fine; the currency is available, and any currency movements will affect both its income and outgoings. However, if the income stream is insufficient to meet the debt cash flows, the company will face a transaction risk similar to that described in Working insight 18.1, possibly leading to an unexpectedly high drain on its cash flows. This might be particularly relevant for acquisitions undertaken at a high P/E ratio, for which the finance raised (and thus the servicing charges) will be substantial in relation to the income stream acquired. (Of course, this should only be a problem in the early years after the deal: the whole objective of a high P/E deal is that the target is expected to grow rapidly, and thus generate the required income streams.)

Companies wishing to raise funds in a particular currency will find that today’s financial markets provide a variety of mechanisms to effect such transactions, for example, the Eurobond markets.

Eurobonds are bonds which are denominated in currencies other than that of the country in which they are sold. For example, a $-denominated bond issued in London, or a ¥ bond sold in the US are both Eurobonds; the ‘Euro’ part of the name has nothing to do with the European currency. These international bonds are widely traded on the markets, and give companies access to a more extensive range of financing sources than they would have were they to restrict their activities to their local currency.

We should also remember companies have the ability to enter into currency swaps (which operate in a similar manner to the interest rate swaps discussed in the Annex to Chapter 11), so that the currency in which the loan is first raised need not be the currency finally adopted. For example, it might be the case that an acquisition made in the US is initially financed in US dollars, but, when the target’s main income sources are understood more fully, part of that $ liability is swapped into another more appropriate currency, to hedge trading exposures.
ISSUING SHARES ACCEPTABLE TO FOREIGN SHAREHOLDERS

The third financing possibility we suggested was for the acquirer to issue shares that would be acceptable to the overseas shareholders. This could be done, for example, by listing its shares on the overseas exchange, or by issuing depositary receipts.

SECONDARY LISTING

If a company makes a major acquisition in an overseas territory, it may choose to take a secondary listing on one of that country’s stock markets. Doing this would mean that shareholders in some jurisdictions would legally be able to own the shares, and all shareholders would more easily be able to deal in them. This could make the deal more attractive to the target’s shareholders, who might not want to own shares on a foreign exchange: this is one reason why Spanish bank Santander took a London listing after it acquired Abbey, a UK bank, in 2004.

The secondary listing could also make it easier to reward overseas employees using equity-based incentives. Furthermore, the company might benefit in other ways; if a major part of its business is now to be conducted in another country, having wider exposure in their capital markets can be an advantage.

The disadvantages of a secondary listing mostly revolve around its cost; it can prove very expensive to comply with regulatory requirements for two exchanges.

A further disadvantage of secondary listing is that shareholders, by and large, just prefer their own territories. When DaimlerChrysler was formed, the company was listed jointly in the US and Germany, and about 50% of its shareholders were based in the US. In May 2001 the Financial Times reported that only about 20% of the shares remained US-owned, the rest having been sold into the German market (a process known as ‘flowback’). It seems that many US shareholders preferred not to invest in what is seen as a ‘German’ company.

DEPOSITORY RECEIPTS

Should a company choose not to list on another market, it can instead issue depository receipts, which are another means to achieve its aims. The most common form of depository receipts are American Depository Receipts (ADRs), although Global Depository Receipts (GDRs) are also available.

Using an ADR facility, a company will deposit some of its shares with a US trust bank which offers this service. The bank will then issue investors with bearer certificates confirming that the bank owns a certain number of shares, and the bearer is entitled to the proceeds of those shares. An ADR might represent an underlying investment of say 10 or 20 shares in the company. The trust bank will pay the underlying dividend entitlement to the bearers, who will be able to trade the ADRs. The market price of ADRs generally follows that of the underlying shares, although supply and demand may at any time lead to a pricing discount or premium.

The advantage to the company of using ADRs is that the administrative burden and cost are considerably lower than those of maintaining a secondary
listing. For the investor, ADRs give a chance to invest in an overseas company, making a $ investment which they can easily buy and sell.

POST-DEAL MANAGEMENT

In Chapter 15 we pointed out that research indicates that many acquisitions fail. International acquisitions are harder, and the causes of failure more varied. In addition to the ‘normal’ integration issues, the following should be considered.

- The global structure of the new organization needs to be determined strategically, and issues such as the location of head offices and operating centres must be addressed.
- The management resource required to integrate an international acquisition is considerably greater than for a domestic one. Further, integration managers must be based full time in the acquired company’s country, and must have relevant language skills as well as fully understanding the business and strategy of the acquirer.
- Cultural barriers may make integration very difficult. For example, the level of formality between workers and between management levels may differ between countries; employee rights and expectations can be diverse; ethical and governance issues may be seen in very different ways, as may the balance between risks and opportunities. In a more extreme example, if the takeover was hostile, it may be deeply resented by the target company’s employees. See, for example, Case study 18.2 on Vodafone/Mannesmann.
- Without full integration of the new subsidiary, it may be impossible to achieve the planned synergies.

18.2 CULTURAL BARRIERS

VODAFONE AND MANNESMANN

The hostile takeover of Mannesmann by Vodafone in 2000 was unusual, in that the regulatory environment means that successful hostile bids for German companies are very rare (although German companies are very adept at acquiring businesses in other countries). Accordingly, the very fact of the deal came as a culture shock to the employees of the long-established German company.

During the initial period of ownership, Vodafone did the following:

- Sold off the prestigious Mannesmann fine art collection.
- Sold off the century-old wood panels in the board room.
- Stopped the practice of sending employees cards and wine on their birthdays.
- Promoted its charitable donations in order to benefit from the publicity (Mannesmann had always given anonymously).

These actions, which would have been seen as reasonable in shareholder value-based Anglo American cultures, were totally alien to the German employees and caused deep resentment.

• Legal differences may cause problems. For example, the divergence in data protection legislation between the UK and US might mean that a UK subsidiary could not send certain customer information to its US parent; again reducing the opportunities for synergistic expansion.

Taxation issues and repatriation of profits need also to be considered. These are often linked, and a company should not consider making an overseas acquisition unless it understands how the profits of its acquired subsidiary (and maybe even its worldwide profits from other countries) will be taxed. And the issue of whether, and how, profit can be repatriated, should also be addressed in advance; it is not always automatic that dividend distributions can be made as and when desired.

CONCLUSION: DOES THE ‘GLOBAL COMPANY’ EXIST?

International corporate finance is different to the domestic variety, as companies face far more barriers to success at all stages of the transaction and in its ongoing management.

It is interesting that overseas investment risks and foreign currency exposures still take up so much time of senior managers in many multinational or transnational corporations. The development of global brands, global products and, to a lesser extent, global customers, has driven expansion, and yet there is no really global company. A global company would not need to hedge foreign currency exposures because they would not exist.

If a company were truly global, it would have balanced its business exposures (in terms of profits and cash flows) to the relative economic size of the countries and currencies around the world. However it would have gone one stage further and balanced its ownership and funding sources on the same basis as its profits and cash flows so that its investors were not all expecting a return denominated in a particular currency, such as the US dollar. At present, even though investors in very large companies may be located all over the world, they will still view each such investment as being based in a particular currency.

KEY MESSAGES

• The same principles of finance apply to international deals as apply to all other transactions.
• International corporate finance is more complex than operating within the home country’s boundaries. As well as currency issues, management has to understand cultural and legal differences. Post-deal integration will also be more difficult.
• Currency risk takes three forms: transaction, translation, and economic. Companies can choose to take action to reduce each of these risks.
• Funding an overseas acquisition is more difficult than funding one in the same territory, as the target’s shareholders might not wish to hold shares in a foreign country.
KEY TERMS IN THIS CHAPTER

Depository receipts
Economic risk
Eurobonds
Flowback
Foreign currency option
Forward contract
Hedging
Purchasing power parity
Secondary listing
Transaction risk
Translation risk
Overview
Introduction
Shareholder value management
Sustainable growth
Factors affecting the working capital cycle
  Country impact
  Industry impact
  Risk and return
  Effectiveness of systems
Financing working capital
  Cash and overdrafts
  Asset finance
Key messages
Key terms in this chapter
OVERVIEW

Working capital, the investment in inventories and debtors net of creditors, is a significant investment in many companies’ balance sheets. In order to create value for shareholders, this investment needs to be managed down to the minimum levels consistent with the company’s business strategy. In order to do this, it is important to understand the reasons why the investment in inventories and debtors is being made, and to deal with areas of inefficiency and inconsistency.

In financing their working capital needs, companies can use short-term bank finance such as overdrafts, or can use asset finance such as factoring debtors. Issues to be considered relate to the risk preference of the shareholders and managers, the relative costs of the finance, and the level of flexibility that is desired.

INTRODUCTION

Working capital is the only investment a company makes on which it doesn’t expect a defined return. The investment is needed in order to ‘oil the wheels’ of business rather than to produce something itself. Because of this, many companies have over-invested in working capital, leading to cash flow problems and to a diminution of shareholder value.

For many businesses, the components of working capital represent the largest items on the balance sheet. Despite this, they tend not to be seen as issues demanding strategic consideration or top management attention. Companies which have detailed procedures for evaluation and approval of even trivial capital expenditure will often leave the management of inventories and debtors to junior employees.

We have already established, in Chapter 1, that reductions in the level of working capital can enhance shareholder value. Accordingly, in this chapter we consider why companies hold working capital; how it can be financed; and how the management of working capital should form part of the overall business and financial strategy.

SHAREHOLDER VALUE MANAGEMENT

In Chapter 1 we considered Rappaport’s seven drivers of shareholder value, and established that one of these was a reduction in the incremental need for working capital. Reducing working capital requirements means that a business has less cash outflows (for inventories and debtors) as it expands, and the resultant increase in cash flows adds to the value of the business. Other factors also drive shareholder value – for example, increases in profitable sales growth, but for many businesses it is easier to make improvements in the levels of working capital than it is to generate and sustain an improvement in profit. Furthermore, by working on both the profitability and the underlying investment, companies can leverage any improvements they make.
The level of working capital in a business has a direct effect on the amount of growth the company can sustain organically from its own internal resources. Growth in sales requires that the business takes on additional inventories and has more debtors. Even if no further capital expenditure is required to achieve the growth, the underlying capital invested in a business will still need to increase.

The amount of growth that a business can sustain out of its own resources, before issuing new capital, is constrained both by its anticipated rate of profitability and by the underlying asset requirement. Thus, if a company is to grow without borrowing or issuing further capital it needs either to increase its profitability or to make better use of its assets. In Appendix 1 the growth assumptions underlying the dividend growth model are established, so growth can be calculated as:

\[ g = \text{return on investment} \times \text{retention ratio} \]

Increasing the company’s return on investment – for example, making the same return on a lower (working capital) investment – will increase the funds available for reinvestment and thus increase the sustainable growth level.

**FACTORS AFFECTING THE WORKING CAPITAL CYCLE**

The working capital cycle (the time taken to convert orders to cash received, net of creditors) is illustrated in Figure 19.1. The cycle commences when the company receives an order from its customer (or decides to make for stock). Inventories are acquired, which may be converted through the stages of work...
in progress and finished goods. These stocks are held as current assets until the customer buys them. However, at that point no money has changed hands, and the asset of inventory is merely replaced by an asset of trade debtors. It is not until the cash is actually received that the cycle is complete.

The company has to finance the business for the whole of the operating cycle. However, it does not need to do so out of its own resources; some of those inventories will have been bought on credit, and trade creditors finance part of the working capital investment. Thus, the company’s cash requirement is limited to the net of inventories and debtors less creditors.

The working capital cycle for any company is a function of several variables: the country; the industry; the company’s business strategy and attitude to risk; and the effectiveness of its systems.

**COUNTRY IMPACT**

Cultural norms and logistical factors impact upon working capital policies. For example, in countries in which the transport system is unreliable, larger inventories have to be held to compensate for possible extended lead times. Also, terms of trade vary considerably between countries; at the time of writing, the countries of southern Europe have a payment norm for debtors substantially more than that for, say, the Scandinavian countries.

**INDUSTRY IMPACT**

It is self-evident that the investment in working capital will differ across industries. Business-to-business transactions are generally done on credit; manufacturers will have more inventories than will some service industries; professional service firms will have proportionately less reliance on trade creditors than will most other businesses. Figure 19.2 is an illustrative representation of the working capital cycles of some different types of business.

---

**Figure 19.2**

**Working capital in different industries**

- Manufacturer
- Supermarket
- Consultancy

- Inventories
- Debtors
- Creditors
In Figure 19.2, the working capital cycle is displayed in a slightly different manner. Current assets are shown as bars to the right of the vertical line, and creditors to the left. For a manufacturing company, the picture represents a heavy investment in stock and debtors, offset by significant trade credit.

The picture is reversed for supermarkets. These are retail businesses selling to end customers, so there are no debtors; and they operate on minimal inventories. Further, they have the buying power to take long credit periods from their suppliers – accordingly, their net working capital investment is actually negative; the more they grow, the more finance they obtain out of their working capital.

Finally in Figure 19.2 we illustrate the working capital investment for some consultancies and other service firms. Although they have no physical stocks, they often have large sums tied up in work in progress, which cannot be invoiced until milestones are achieved. Once they have invoiced, clients are often slow to pay. But consultancy firms, whose main cost is their people, have no trade creditors against which to offset the working capital investment: they can hardly delay paying staff wages in order to mitigate operating needs.

When moving into an industry it is important to understand why its working capital patterns are as they are. Only with this understanding can the accepted norms start to be changed, for example, to reduce stock-holdings or manage debtors more effectively.

RISK AND RETURN

At an individual company level, which is where financial strategy tends to operate, one of the main factors influencing working capital levels is the business’s strategy and its attitude to risk. Each element of the working capital equation can be regarded as taking a particular position on the risk–return continuum, and different companies will adopt differing commercial strategies, putting them in different categories.

The trade off between investing in working capital (reducing returns) and not making the investment (taking risks) is illustrated in Working insight 19.1.

The principles behind the table in Working insight 19.1 can be used to ensure that the chosen working capital strategy ties in with the business strategy. For example:

- A business which sees its competitive advantage as lying in the full service it provides to customers may need to maintain much higher levels of inventory than a discount house with limited ranges and service.
- Setting a tight credit policy to control debtors could well counteract other marketing initiatives the company is taking; these activities need to be coordinated and controlled.
- A business which has a policy of working closely with its suppliers may decide to pay far more quickly than one which has determined a more combative stance, as illustrated in Case study 19.1.

On principle, we never give advice about managing the third element of the working capital cycle: trade creditors. One business’s trade creditors are another’s debtors, and taking extended credit just moves the problem along the supply chain. Accordingly, when we work with companies in this area we focus on managing the assets down rather than increasing liabilities.
Other working capital issues relating directly to the chosen business strategy include:

- The need to hold additional inventories for each new outlet (retail or manufacturing) opened.
- Synergies created by reducing overall working capital through horizontal or vertical acquisition strategies.
- Credit terms for suppliers and customers will be dependent on the balance of power within the industry.
- The risk of short business cycles resulting in excess stocks of items that are no longer in fashion.
- Decisions to sell into segments with a traditionally poor payment record. (This may be a value-creating strategy if the company can make enough incremental profit out of the customer before the eventual bad debt arises.)
EFFECTIVENESS OF SYSTEMS

The ways in which a particular business processes its transactions can have a significant effect on the levels of working capital maintained. This can be investigated using the components of, for example, the order-to-receipt cycle illustrated in Figure 19.3. This sets out, for a typical company, the processes that are undertaken in order to service the customer and, ultimately, to bank their payment. Analysis of what happens at each stage can help to evaluate where improvements can be made, and the cycle can be shortened. Again, it is worth pointing out that such improvements have to be in line with the business strategy of the unit.

FINANCING WORKING CAPITAL

The working capital investment, which will vary from day to day as trading progresses, needs to be funded, and companies have several strategic options in managing this financing requirement. Some businesses choose to have sufficient cash funds available to meet their day to day needs; some have overdrafts or borrowing facilities; others use a form of asset finance. Each of these is considered below.

CASH AND OVERDRAFTS

The advantage of holding cash balances (which in some organizations are viewed as part of the working capital investment) is that the business can
always meet demands. The disadvantage of holding cash is that cash itself is an investment which generates a very poor return. Funds on deposit with the bank are unlikely, by definition, to produce a return which will satisfy shareholders.

As mentioned in Chapter 4, for private businesses this latter point need not be a consideration. We know of several small private companies in which considerable amounts of money are kept on deposit, instantly available should they be required. As financiers, we understand that this is an inefficient use of funds; as risk-averse individuals we appreciate the attraction of being able to sleep easy at night, knowing that a cash crisis is unlikely. For a private company, in which ‘shareholder value’ means meeting the needs of the owner/directors, this is a reasonable attitude.

However, companies with a broader shareholder base need to be more focused in their use of funds, and having excessive cash deposits is a poor strategic decision.

As a general rule, a company should finance itself with a mixture of short- and long-term funds, of which cash plays a part. Figure 19.4 illustrates this.

In Figure 19.4, the business has a mixture of long-term debt and equity, determined in accordance with the principles we have been presenting throughout this book. As it grows it needs further cash. However, the cash needs are not uniform – either seasonality or a business cycle could mean that the cash requirement varies. This company has chosen to operate with an initially low proportion of debt, increasing gearing over time. It has increased equity over the period\(^2\), and has also raised long-term loans. The quantum of loans raised is such that cash is sometimes on deposit, but that sometimes an overdraft is required.

\(^2\) In practice of course, equity will change each period as profits are retained.
The decision as to how much short-term finance will be used, and how it will be structured, should be made in the light of the business requirements and the preferred attitude to financial risk.

Two final points should be noted as regards the use of short-term borrowing facilities. The first is that, in our opinion, it is always useful to have negotiated a borrowing facility even if it is not immediately required, as this gives financial flexibility\(^3\). The second issue is that, in the UK, overdraft facilities are repayable to the bank on demand. No breach of covenants is needed for the bank to change its mind about the funding, and require repayment. Thus overdraft finance is not nearly as low risk for companies as would be a negotiated loan.

**ASSET FINANCE**

Banks will lend short-term finance against the business generally. However, there are also specialist financial institutions which will advance monies against specific elements of working capital. Inventory finance is available from some, but debtor finance is far more common, and so it is this on which we focus.

Debtor finance (invoice finance) has been in common use for many decades. It is interesting to note that accountants and professional advisers tend to fall into two camps about the use of invoice finance: they either hate it and see it as a sign of ‘last resort’, or they appreciate its flexibility. We own up to falling into the latter camp, having successfully used invoice finance in several growing businesses.

Invoice finance takes two main forms: factoring and invoice discounting.

In factoring, the company effectively sells its debtors to the factor (often a bank subsidiary that specializes in this type of transaction). When it raises an invoice, it sends one copy to the customer and, at the same time, a copy to the factoring company. The factoring company will then advance to the company a proportion (generally about 70–80%) of the invoice value. Thus the business has access to funds immediately, rather than waiting for the debtor to pay. When the debtor does eventually pay, they are instructed to pay the factor rather than their supplier. Once the factor has received the funds, the balance of the invoice amount is credited to the business’s bank account. (Commission and interest are of course deducted – nothing is for free in this world.)

The cash flows in factoring are illustrated in Working insight 19.2.

Factoring has several advantages as a form of finance:

- Funds are available immediately, rather than waiting until the customer pays.
- Funds available are directly linked to the funding need, as they reflect the level of business.
- Factoring companies will advance a higher percentage of the debtor book than would banks which secured overdraft finance on debtors (because they understand the risks better, and have more control).

---

\(^3\) Although we should point out that if a company’s circumstances change such that it does require the financial facility, this change itself is often sufficient to breach banking covenants so that the funds are no longer available. It’s not for nothing that there is a saying about bankers only offering to lend you an umbrella when it’s not raining!
Factoring companies often collect debtors earlier than would the trading businesses, as their systems are more efficient.

The factor manages the company’s debtors ledger, effectively outsourcing this operation.

Factors can advise on the credit-worthiness of potential customers (indeed, they may refuse to take on the debts of some customers).

A company can choose to factor only part of its debtors, for example, those relating to export sales, in which it has little experience of debtor management.

For an additional fee, the factor will take on the risk of bad debts.

It is also true to say that there are many disadvantages of factoring compared to, say, bank borrowing in a more traditional form:

- Factoring is more expensive, with commission on top of higher interest charges.
- Inserting the factor into the customer–supplier relationship may damage that relationship, particularly if the factor is aggressive in chasing debts.
- The company loses control over its debtors ledger, which some see as a key management and marketing tool.
- Factoring is still trying to get rid of the poor reputation it had in the 1970s as ‘lender of last resort’ – the use of factors may send unwelcome (and false) signals about the business’s financial stability.

Cash flows in factoring

Assume that Company factors its debts with FacCo, which advances 80% of the invoice amount immediately, and the balance when it receives the funds. FacCo charges commission of 1% of turnover, and charges interest at 2% over factoring base rate, which is 8%. On 1 January Company sells goods to Customer for £1,000; Customer pays on 31 March.

<table>
<thead>
<tr>
<th>Date</th>
<th>Company</th>
<th>FacCo</th>
<th>Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 January</td>
<td>Movement of goods/services</td>
<td>Send invoice for £1,000</td>
<td>Send copy invoice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 January</td>
<td>Commission paid £10</td>
<td>Funds deposited in factoring account £800</td>
<td></td>
</tr>
<tr>
<td>31 March</td>
<td>Payment of invoice £1,000</td>
<td>Payment of balance of funds £200</td>
<td>Interest paid on £800 borrowed for 3 months at 10%, £20 (actually charged on a daily basis on the outstanding balance on the account)</td>
</tr>
</tbody>
</table>

WORKING INSIGHT

19.2

Cash flows in factoring

Assume that Company factors its debts with FacCo, which advances 80% of the invoice amount immediately, and the balance when it receives the funds. FacCo charges commission of 1% of turnover, and charges interest at 2% over factoring base rate, which is 8%. On 1 January Company sells goods to Customer for £1,000; Customer pays on 31 March.

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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 January</td>
<td>Commission paid £10</td>
<td>Funds deposited in factoring account £800</td>
<td></td>
</tr>
<tr>
<td>31 March</td>
<td>Payment of invoice £1,000</td>
<td>Payment of balance of funds £200</td>
<td>Interest paid on £800 borrowed for 3 months at 10%, £20 (actually charged on a daily basis on the outstanding balance on the account)</td>
</tr>
</tbody>
</table>
Some of the downsides of factoring are addressed in the other main invoice finance technique: confidential invoice discounting. Although similar in effect (the company still obtains a proportion of its debtors ledger instantly), confidential discounting differs from factoring in three ways:

1. The debtors remain the legal property of the company, which maintains its own debtors ledger.
2. The customer is not aware of the financing transaction, as payment is made direct to the supplier.
3. Costs are lower, because the factor is providing fewer services.

It will be noted that factoring bears some resemblance to securitization, discussed in Chapter 12, in that both involve the receipt of funds secured on trading assets. The two come closer in the issue by some companies of commercial paper, which is a short-term asset-backed security issued by larger corporates.

Whichever method is chosen to finance working capital, it is essential that the business has good systems to manage and control this investment. Cash flow forecasts, as described in Appendix 3, need to allow for working capital movements, including building up seasonal peaks of inventories. They also need to be flexed to show the impact on the business of any element of working capital getting out of control.

**KEY MESSAGES**

- Working capital comprises the net of stocks (inventories) and trade debtors less trade creditors.
- Working capital represents a substantial investment for most companies, and needs to be managed strategically, to be maintained at the lowest level consistent with value creation.
- Long-term financial needs, including the core element of working capital, should be funded with long-term finance. Short-term needs should be funded with short-term funding.
- Factoring and invoice discounting are types of asset finance which can be used to fund working capital (debtors).

**KEY TERMS IN THIS CHAPTER**

<table>
<thead>
<tr>
<th>Commercial paper</th>
<th>Order-to-receipt cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debtors</td>
<td>Stocks (inventories)</td>
</tr>
<tr>
<td>Factoring</td>
<td>Sustainable growth</td>
</tr>
<tr>
<td>Invoice discounting</td>
<td>Working capital cycle</td>
</tr>
<tr>
<td>Operating cycle</td>
<td></td>
</tr>
</tbody>
</table>
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Appendix 1: Review of theories of finance

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OVERVIEW

This Appendix sets out an explanation of financial theory sufficient to give the reader a background to the issues discussed in the rest of the book. The topics covered are:

- Discounting and calculating the value of bonds.
- The cost of capital:
  - calculating the cost of equity using the Dividend Growth Model;
  - calculating the cost of equity using the capital asset pricing model;
  - calculating a weighted average cost of capital and designing an appropriate capital structure.
- The efficient market hypothesis.
- Dividend theory.

INTRODUCTION

It would be a very daunting prospect to try to review the mass of developments in the theory of finance in one brief appendix of this book. Not surprisingly therefore, this review is both very selective and very concise on each topic, concentrating only on the key elements of the theories and highlighting, where relevant, the essential underlying assumptions on which the theory or model is based. In writing the book we have assumed that our readers already have some familiarity with financial theory, and seek from us only an aide-memoire to remind them of the key points. Accordingly, in this Appendix we cover the theories of finance only insofar as they are necessary to set a context for the rest of the book, and in summary rather than in depth.

In most cases the theories are referred to by their inventors’ or discoverers’ names but no attempt, due to constraints of space, has been made to be academically rigorous in giving copious references to the derivation of the formulae, etc. This is also partially because the theories are comprehensively covered in most of the basic existing finance textbooks and it was never our intention to try to reproduce that type of book.

DISCOUNTING AND THE VALUE OF BONDS

An appreciation of the time value of money is fundamental to financial theory and practice. Money now is worth more than money in the future; accordingly, if we lend or invest money we expect to receive a return on that investment. This return compensates us for not being able to spend the funds immediately, for the risk of non-return of the funds, and for the fact that inflation might erode the value of the funds over the investment period.

Although in practice the return on an investment means that a greater sum is available at the end of the investment period than the beginning, financial convention dictates that when comparing investments we determine the equivalent sum that they would be worth at the start of the period – the net present value.
(NPV) – rather than the total to be received by the end of the period – the terminal value. This facilitates comparisons between investments.

We evaluate the NPV of an investment (be it an investment in financial instruments or in real assets of a business) by discounting the cash flows expected from that investment. Discounted cash flow (DCF) analysis applies discounting factors (the inverse of compounding factors) – to each future period’s expected cash flows. Working insight A1.1 illustrates an example whereby DCF analysis is used to determine the value of a bond.

In Working insight A1.1, the bond traded at a discount to its face value. This is because the bond only pays an interest rate of 7%, which is lower than the 8% paid by other similar bonds and so the instrument is worth less.

Working insight A1.2 shows what would happen to the value of the same bond if, two years later, market interest rates had fallen to 5%.

### Bond valuation (Part 1)

A £1 million five year bond offers a 7% rate of interest, payable annually in arrears. The current required market rate of return for this investment is 8%. What is the value of the bond on the market?

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash flow</th>
<th>Discount factor at 8%</th>
<th>Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–5 (interest)</td>
<td>£70k per annum</td>
<td>3.993</td>
<td>£279.5k</td>
</tr>
<tr>
<td>5 (repayment)</td>
<td>£1000k</td>
<td>0.681</td>
<td>£681.0k</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>£960.5k</td>
</tr>
</tbody>
</table>

The present value of the cash flows from the bond is £960.5k, therefore that is what a rational investor would be prepared to pay for it.

### Bond valuation (Part 2)

The £1 million bond offers a 7% rate of interest, payable annually in arrears, and has three years to run. The current required market rate of return for this investment is 5%.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash flow</th>
<th>Discount factor at 5%</th>
<th>Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–3 (interest)</td>
<td>£70k per annum</td>
<td>2.723</td>
<td>£190.6k</td>
</tr>
<tr>
<td>3 (repayment)</td>
<td>£1000k</td>
<td>0.864</td>
<td>£864.0k</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>£1054.6k</td>
</tr>
</tbody>
</table>

The present value of the cash flows from the bond is now £1054.6k.
The fall in market interest rates means that the bond in Working insight A1.2 is relatively more valuable, and so it is trading at a premium to the £1 million face value.

The principles of DCF underlie much of the theory of finance and are fundamental in understanding the valuation of all types of financial instrument. In order to apply DCF techniques a discount rate is needed, and it is the derivation of this discount rate, based on a company’s cost of capital, which is explored in the next section.

**THE COST OF CAPITAL**

Companies can raise money using two basic forms of instrument – debt and equity. We established in Chapter 1 that the return that the investors demand from their investment is directly related to their perception of the risk of that investment. For the investor, debt is a much lower risk investment than is equity (there is less volatility in the expected returns) and therefore lenders require a lower return than shareholders.

In this section we consider the cost of debt \( (K_d) \), two different ways of calculating the cost of equity \( (K_e) \), and the calculation of the weighted average cost of capital (WACC), which often forms the basis for the discount factor applied in DCF analysis.

**THE COST OF DEBT**

We have seen from the example in Working insight A1.1 that the cost of debt is based on the current market rate for debt of that risk level. The fact that a business raised debt at 7% some years ago is irrelevant to its cost of debt; what is significant is that lenders now are demanding an 8% return on their money – that must be the basis for the company’s \( K_d \) calculations.

However, the cost of debt to the company is actually less than 8%, as governments subsidize debt by allowing interest to be tax-deductible. If a company borrows £1 million at 8%, the interest charge of £80,000 is allowable as an expense for tax purposes. Accordingly, if tax rates are 30%, the company’s tax liability is reduced by £24,000 (£80,000 \times 30%). This means that the net cost to the company is only £56,000. Thus, provided that a company is paying tax, this *tax shield* reduces the cost of the debt.

\[
K_d = (i - t)
\]

(A1.1)

where \( i \) is the interest rate to be applied, and \( t \) is the tax rate.

This means that debt is doubly cheaper than equity: not only is it inherently cheaper as a low-risk financial instrument for the lender, but the additional tax subsidy reduces its cost still further. One begins to see why companies like to use debt as a source of finance.

**THE COST OF EQUITY**

Two separate ways of calculating the cost of equity will be considered: the dividend growth model and the capital asset pricing model (CAPM).
**Simple dividend growth model**

Shareholders achieve their return through a mixture of dividends and capital gain. Assume an investor, let us call him A, buys a share to hold for three years. At the end of each of those three years he receives a dividend on the share, then he sells it on to investor B. Investor B will only buy the share if she too believes that it will be a good investment, generating dividends and a capital gain. She too holds it for three years, selling on to C. And investor C too … well, you get the picture.

We could run through the whole alphabet with investors receiving dividends and then selling on the share, but the basic principle is clear:

1. investors receive a dividend and capital gain;
2. the reason that they can sell the share to other investors is because those buyers also expect to receive a dividend, and to be able to sell it on at some future point.

We all know of shares which do not pay out dividends (indeed, they are discussed in Chapter 4). However, this in no way invalidates the model: profits reinvested by the company will lead to larger profits and greater dividends in the future. Ultimately, the company has to pay out all of its profits by way of dividend – otherwise there is no point in being an investor.

So, investor A paid price $P_0$ for the share, and received dividends $D_1$, $D_2$ and $D_3$. He then sold for price $P_1$.

Investor B bought for price $P_1$, received dividends $D_4$, $D_5$ and $D_6$ and then sold for price $P_2$.

Investor C paid price $P_2$, received dividends $D_7$, $D_8$ and $D_9$ and then sold on for price $P_3$.

If we eliminate the share prices paid between investors, we are left with a stream of cash flows from the company: $D_1$, $D_2$, $D_3$, $D_4$, $D_5$, $D_6$, $D_7$, $D_8$, $D_9$. It is this stream of cash flows that we can value to value the share.

If we assume that the shareholder requires a return of $K_e$, the cost of equity, then the value to the shareholder of the share (i.e. its price) is:

\[
P = \frac{D_1}{(1 + K_e)} + \frac{D_2}{(1 + K_e)^2} + \frac{D_3}{(1 + K_e)^3} + \ldots + \frac{D_t}{(1 + K_e)^t} \tag{A1.2}
\]

If we assume a compounding relationship\(^1\) between the dividends from each year, with dividends growing at the rate of $g$ per annum such that $D_2 = D_1(1 + g)$ and $D_3 = D_2(1 + g)$, equation A1.2 can be simplified to give the standard dividend growth model as developed by Gordon and Shapiro\(^2\):

\[
P_0 = \frac{D_1}{K_e - g} \tag{A1.3}
\]

---

1 We do appreciate the absurdity of the assumption of compound dividend growth to infinity. It is one of the restrictions of the dividend growth model. There are several more complex versions of the model available, which assume staged growth. However, the basic model is widely used and is essential to financial understanding.

This equation sets out the price of the share (or of the company) in terms of its forthcoming dividend, growth assumptions and the cost of equity. It can be re-written to calculate the cost of equity based on a knowledge of the share price, as follows:

$$K_e = \frac{D_1}{P} + g$$

(A1.4)

It is obvious that a key driver of the functions in equations A1.3 and A1.4 is the growth assumption. Technically, this represents growth in dividends, and assumes a constant payout ratio over the company’s future life (which those of us who have read Chapter 4 will realize is an unlikely situation). We also assume that the amount reinvested (one minus the payout ratio) can be reinvested at a constant rate of return. Thus, we can calculate what g might be, as shown in Working insight A1.3.

The formula in Working insight A1.3 is illustrated numerically in Working insight A1.4.

**Calculation of growth for the dividend growth model**

Assumptions:
1. Dividend payout ratio is constant over time, and so therefore is the retention ratio.
2. Return on reinvestment is constant over time.

The combination of these assumptions means that profits growth (and therefore dividend growth) is constant over time:

$$g = \text{retention ratio} \times \text{return on reinvestment}$$

**Example of growth calculations**

Company Z started the year with equity of £1,000 and made profits after tax of £100. Of this £100, £20 was paid out to shareholders by way of dividend, and £80 was reinvested in the business.

Return on opening equity = 100/1,000 = 10%
Closing equity = £1,000 + £80 = £1,080

If the return on reinvestment is constant, the company will make profits of 10% of opening capital next year: 10% × £1,080 = £108.

This represents a growth rate in profits of 8/100 = 8%.

Which could also be calculated as:

$$g = \text{retention ratio} \times \text{return on reinvestment}
   = 80\% \times 10\%
   = 8\%$$
We must point out that although a formula-based approach to determining \( g \) is common, the results can be very misleading, not least because balance sheet values under current accounting standards may understate the ‘true’ position. In practice, we often prefer to look at historic trends in growth of profit or dividends, or to take directors’ estimates of future growth as a more realistic representation.

**Capital asset pricing model**

The positive correlation between risk and return has been consistently emphasized in this book; we now examine the theoretical framework for assessing the relevant level of risk. This is one area of finance which has been the subject of massive empirical research because, in the major capital markets at least, there are detailed records of the actual returns achieved by a wide range of alternative financial investments going back decades. Some of these major research studies have compared the levels of average total return (including yield and capital gains) for different investment portfolios over almost this entire period. These analyses confirm the intuitive logic that investors receive a higher return on investments which have a higher risk. Whether the historic data indicate what the investors wanted rather than what they received is a separate issue, nevertheless we tend to use these results to predict the future.

Risk is defined as the volatility in the expected return from a financial instrument. An investor buying a government bond can be reasonably assured that the government will be around in the next few years to honour its interest and repayment commitments; consequently the required return is low. An investor in shares is reliant on the directors’ intentions to pay a dividend, and on the company’s performance and market conditions for her capital gain – this high volatility in expected results translates into a high required return.

The risk of any particular investment can be split into two components – unique risk (also known as company risk or diversifiable risk) and market (systemic) risk.

Unique risk relates to the particular company. It would include the risk of product failures, of the CEO dying, of product-market changes – anything company specific that affects the operating results. However, because it relates only to that company, bad news (or indeed good news) here should have no impact on the other shares in an investor’s portfolio. Market risk on the other hand relates to the market as a whole – for example to the economic cycle which would impact all companies. Market risk cannot be diversified. Figure A1.1 illustrates this.

If I own just one share, then my financial fortune is geared to how well that share performs. If I buy a second share, in a company whose results are not correlated to the first, then my portfolio is diversified and my overall level of risk is reduced. (This can be shown mathematically, as the average return from the two shares will be the sum of their two average returns, but the volatility of the two, as measured by standard deviation, will be the square root of the sum of their squares, which is lower than merely averaging their individual standard deviations.)

It can be shown that an investor who has a diversified portfolio of about 20 shares can eliminate the unique company risk. However, market risk cannot
be eliminated in this way, as all companies, to some extent or another, will be affected by general market movements.

As rational investors can diversify away the unique risk associated with any particular company, they do not need, and should not receive, any additional return to compensate for taking on this unnecessary risk. Therefore shareholders should only be compensated for taking the market risk, which is an inevitable consequence of investing in shares. This is a key principle underlying the CAPM. In order to use it in practice, we need to understand how individual companies are affected by overall market movements.

The measure we use to determine how sensitive individual shares are to the return of the total stock market is known as beta ($\beta$). If, when overall stock market returns increase by 5%, the returns on a particular share rise by 10%, the share is said to have a beta of two. Similarly a less sensitive company may have a beta of 0.75 which means that if returns on the stock market fall by 10%, this company’s return will only fall by 7.5%. Clearly the stock market as a whole has a beta of one, because the stock market is a weighted average of all shares.

From this analysis we obtain the CAPM developed in the 1960s by Treynor, Sharpe$^3$ and Lintner.

From Figure A1.2 we can see that if a share has a beta of one, that is, its movements exactly mirror those of the stock market as a whole, the return that investors require from the share will be the same as the market return. Shares with $\beta > 1$ will demand a higher return than the market; the converse is true for those shares with $\beta < 1$.

The CAPM is elegantly simple, and easy to use. The risk free rate ($R_f$) can be obtained from the yield to redemption on government bonds. Companies’ betas are calculated by investment services, using regression analysis over (say) five years.

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years to determine how that company’s share price has moved compared to the market as a whole. And the market premium \((R_m - R_f)\) has been determined by various academics and practitioners, often by examining 40 or 60 years of data as to how share returns have compared with bond returns.

However, in practice the data are not as straightforward as they may seem. \(R_f\) is the yield on government bonds: should this be three month bills, or 30 year bonds – each has a different yield to redemption. Beta is calculated by regression, but selecting different regression periods, or even carrying out the calculations for different days of the week, can give very different results. The market premium has been derived from historic data, but different calculation methods give very different results, and there are also some sources who state that past market returns are no guide to what investors actually require in the future. CAPM, although extensively used in practice, is fraught with problems.

We need to explore one further point on CAPM. As described, the CAPM formula can be used to calculate the cost of equity for a company. The beta we have discussed is the company beta, and reflects the company risk profile. But companies incur two main types of risk – business risk and financial risk. The beta of a company, which reflects its historical volatility against the market, incorporates both of these.

The cost of equity, \(K_e\), can be represented by the equation

\[
K_e = R_f + \beta (R_m - R_f)
\]

Where \(R_f\) is the risk free rate, \(\beta\) is the market risk of a particular share, and \(R_m\) is the required return on the stock market as a whole.
It is possible to deconstruct company betas (which are also known as equity betas) in order to establish the beta of the underlying assets – a reflection of the business risk. This can be done using the following equation:

$$\beta_{asset} = \beta_{debt} \left[ \frac{Debt}{(Debt + Equity)} \right] + \beta_{equity} \left[ \frac{Equity}{(Debt + Equity)} \right]$$

(A1.5)

It is generally assumed that the beta of debt approximates to zero. If we take $\beta_{debt}$ as zero, then equation A1.5 simplifies to:

$$\beta_{asset} = \beta_{equity} \times \frac{Equity}{(Debt + Equity)}$$

(A1.6)

The difference between the equity beta and the asset beta reflects the financial risk caused by the funding strategy of the company; were the company to be financed totally by equity, the equity beta and the asset beta would be the same.

Asset betas can be used to determine an appropriate discount rate to use on a project which is of a different risk level to the company as a whole, or can be used to determine the appropriate beta to use for evaluating an unquoted business (which, by definition, does not have a share price and so does not have a directly calculated beta).

**WEIGHTED AVERAGE COST OF CAPITAL**

Companies will be funded with a variety of financial instruments, but for the purpose of this section we will simplify matters so that they have a choice only of debt and equity. As established earlier, debt is a cheaper form of finance, being intrinsically safer for the investor, and subsidized by the tax system. However, it would be unrealistic for a company to finance itself solely by debt; although less risky for the investor, debt carries a significant risk to the company, and too much could drive it into liquidation. Accordingly, we need to establish how to determine an appropriate capital structure for a company, and be able to derive its overall cost of capital at that capital structure.

We should point out that much of financial theory derives from the work of Modigliani and Miller⁴ who, in a seminal paper, demonstrated that capital structure is irrelevant to the value of a company. The value of the company is determined by the NPV of its future cash flows, and they argued that this total value is not changed by changing the sources of funding. If the total value is fixed, then an increase to one provider will be counterbalanced by a decrease to another provider. Modigliani and Miller’s work, set in the conditions of a ‘perfect market’ with restrictive assumptions about tax and other variables, provided an important foundation for financial theory, but in practice most companies and analysts believe that capital structure does have an impact on the cost of capital.

It is a simple matter to determine the WACC for a company. The costs of the individual capital components are averaged based on their weights in terms of market value. Working insight A1.5 illustrates this.

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Based on the above calculation, it might seem that the greater the proportion of debt in the capital structure the lower the WACC of the company. However, this is not the case. As stated earlier, too much debt will increase the company’s risk to unacceptable levels, and both the lenders and shareholders will demand increased returns to compensate for this risk. Further, at very high levels of debt the company may suffer the loss of its tax shield (if interest charges turn profits into losses there is no further tax advantage) and the business may experience loss of confidence due to bankruptcy risk.

The trend in the WACC as debt levels change is illustrated in Figure A1.3.

In Figure A1.3, at a gearing level of zero the company is totally equity financed, so the average finance cost is the same as the cost of equity. As the company begins to substitute cheap debt for expensive equity, the WACC reduces.

Figure A1.3

The effects of changes in gearing on WACC
However, this substitution, increasing the gearing of the company, makes both debt and equity more expensive. Accordingly, although the debt is still cheaper than the equity, both rise in cost and the curve flattens. At the extreme right of the curve, investors and lenders realize their somewhat precarious position and demand very high returns to compensate for the risk.

As we use the company’s cost of capital as a discount factor to apply to its future cash flows, Figure A1.3 can be mirrored in Figure A1.4, which reflects how the value of equity changes with gearing.

It can be seen from Figure A1.4 that ideally a company would wish to position its capital structure somewhere between the dotted lines – minimizing the cost of capital in order to maximize company value. Alas, this theoretical model gives little mathematical indication of where the ‘correct’ capital structure would lie for any company – hence Chapter 4 of this book, which sets out factors to consider.

THE EFFICIENT MARKET HYPOTHESIS

This one sub-section of this appendix has, itself, been the subject of innumerable books, journal articles and other academic treatises; consequently only some of the key elements of the continuing debate can even be alluded to. An initial assumption is one already used right at the beginning of the book but in different words. It is much more difficult to find sources of finance (often referred to as financing decisions so as to separate them from the investment decisions made by the company) which by themselves generate positive NPVs than it is to find similarly attractive investment opportunities.

Indeed, if capital markets are truly efficient, it should be impossible for financing transactions to generate consistent positive NPVs; such a transaction represents a zero sum game so that any gain to one party (the issuer or seller of the financial instrument) must equal a loss to the other party (the purchaser of the same investment). It is important immediately to be precise about what is meant by the word ‘efficient’. This is not intended to mean that asset prices are always ‘right’ in the sense that expectations are always exactly, but only exactly, fulfilled. It simply means that today’s prices incorporate all the information
which is currently available to potential buyers and sellers. If this is true then price movements are caused by new information and as the nature of this new information is, by definition, unknown the impact on prices cannot be predicted. Logically this would suggest no correlation between the direction and size of tomorrow’s price movement and today’s.

The theory of efficient markets was quite neatly broken down into three stages by Roberts in 1967⁵ so that interested parties can now select how efficient they think markets are:

- The **weak form** of the efficient market hypothesis is that all historical price information is incorporated into current share prices. This means that price movements are random and are not controlled by past trends. Commonly referred to as the ‘random walk’ theory, this implies that technical analysis of past price movements (such as is done by ‘chartists’) cannot give investors a competitive advantage.

- The **semi-strong form** argues that all published financial information is already included in the current share price; consequently detailed analysis of a company’s published financial statements should not give a consistently superior return.

- The **strong form** of efficient markets says that current prices reflect all the available information which could be known; in other words, even insider and privileged information would not enable investors regularly to make a better than normal return.

These hypotheses have been tested extensively and most research studies have been unable to demonstrate consistently superior performance by investors, which would disprove the theory. However it is much more difficult to prove such a theory than it is to disprove it and other researchers have argued that most of the large studies have been flawed, pointing to particular studies which indicate consistent superior performance for certain investor groups (such as managers of the companies) or classes of investment (such as small companies in the 1980s and low P/E multiple large companies). In other words, despite massive research efforts there is not universal agreement on whether financial markets are efficient; even among those who believe they are, there is disagreement as to how efficient!

It is also important to remember that these arguments must be applied to specific financial markets. Just because the intense level of analysis and high degree of competition among research brokers, fund managers and other professional investors may make the stock markets of New York and London quite efficient, say at the semi-strong level, this does not mean that all the other stock markets around the world automatically function in the same way.

The implications of an efficient market are quite substantial. If future price movements are random, it is fair to say that share prices have no memory; thus talk of the market reaching record levels is irrelevant: share prices merely move to reflect the new information which has become available. Also if markets are

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efficient so that current prices are always ‘as right as they can be’, the most logical investment portfolio is the stock market index. No consistent gain can be achieved by active trading, that is, moving from one share to another, and increased costs will be incurred.

However, another implication for this book is that the theory, even if true, is always applied statistically, that is, to large samples or to the market ‘on average’. Thus it may be impossible to identify superior returns for a significant ‘group’ of investors but such returns may be achieved by a particular investor. All such specific illustrations of excess return or consistently good financing decisions by particular companies are dismissed by efficient market advocates as ‘anecdotal and statistically irrelevant’. Perhaps this book can help to make the reader and/or your company such an anecdotal irrelevance.

Another fundamental conclusion of the efficient market hypothesis is that all financially viable projects (those generating a positive NPV using an appropriately risk-adjusted discount rate) will be able to raise the required funding. This is because investors are intelligent, rational and objective and can use the available information which is known to the promoters of the project to assess properly its expected risk; thus their views of the project’s financial viability should coincide given this same information which is the essential assumption of an efficient market. Years of anecdotal experience of trying to raise venture capital for many new businesses tend to make this statement debatable, at least.

DIVIDEND THEORY

Earlier in this Appendix, share values were established as being driven by the present value of future dividends. Yet a fundamental theory of finance argues that dividend policy is irrelevant to share values; an apparent contradiction which requires resolution. Dividends form one part of the total return expected by investors; consequently, if a change in dividend policy is to have no effect on share value this change must cause an equal but opposite change in the expected capital gain component of total return. The only other alternative explanation would be that although the change in dividend policy did alter the return, it also affected the investors’ perceived risk by a corresponding amount so that share values were still constant.

The theoretical framework was laid out in 1961 by Modigliani and Miller when they demonstrated that, under the conditions of perfect competition (including no taxes and no transaction costs), dividend policy is irrelevant. Not only do they require the conditions of perfect competition but dividends are defined as being the residual cash flow item after the company has decided on its investment and borrowing plans. In other words investment and capital structure decisions are completely independent of the decision of whether or not to pay dividends.

Clearly if dividends are to be increased but investment and borrowing plans are kept constant, there is a financing gap. This financing gap can only be filled by raising equity (issuing new shares). Those new shares must be worth their issue

6 F. Modigliani and M.H. Miller, ‘Dividend Policy, Growth and the Valuation of Shares’, The Journal of Business, October 1961
price (under perfect competition, if this were not true no-one would buy them) but, in total, this is equal to the total additional dividends being paid. However the total value of the company has not been altered because its investment policy is still the same, so that the expected present value of its future cash flow has not changed. The value of these new shares can only be produced from a reduction in the value of the existing shares, on which the extra dividend is being declared. The reduction in value of the existing shares is, therefore, exactly equal to the extra dividend being paid to the holders of these existing shares. Hence they should be indifferent as to whether they receive the extra dividend or not; the first alternative condition outlined above has been satisfied. The extra dividends do, of course, provide a cash inflow to the shareholders but, in a perfectly competitive market, they could generate the same cash flow by selling the appropriate proportion of their existing shares in the market. Their remaining fewer shares, which have not been reduced in value by the issue of new shares, will have the same value as the larger number of lower priced shares held following the increased dividend declaration.

The logic of this analysis is self-evident but it does, of course, hinge on some very restrictive assumptions regarding the external market environment and investors’ reactions to changes in the mix of their returns. However the most critical restriction is caused by the total separation of dividend policy from investment and financing policies. Clearly in an environment of no taxes and transaction costs there will be no value change in paying a dividend if the amount of the dividend has to be reinvested, either by the existing investors or by new investors with the same risk perception. This same risk perception is also a key assumption of perfectly competitive and even efficient markets. Indeed this argument of dividend irrelevance holds for efficient rather than perfectly competitive markets (the key difference being that perfectly competitive markets require perfect foresight, that is, no risk regarding future cash flows) as long as the investment and financing policies are kept totally independent of the dividend policy.

This does not contradict the logic of Chapter 4 because an increasing dividend policy was driven by the reducing opportunities for profitable reinvestment during a period of increasing positive cash flow. In other words the financial strategy is interrelated rather than compartmentalized and abstracted.

There are, as usual, many differing views regarding the relevance of dividend policies to share values in the real world where not only taxes and transaction costs exist but dividends may also provide information signals to investors. Although investors are actually interested in future cash flows, they receive primarily historic accounting-based earnings information from the company. If increased current accounting earnings are followed by an increased dividend payment, investors may become more confident that these earnings are both real in that they represent current or future increases in cash inflows (i.e. they are not achieved by ‘Mickey Mouse’ creative accounting) and are expected by the company’s managers to be maintained or further improved in the future. This increased confidence reduces the investors’ perceived risk and can therefore increase the share price; but, of course, advocates of the efficient market theory argue that this information is already built into the existing share price. If it is not already incorporated, the counterargument is that this information
flow represents a one-off movement in the share price caused by a change in the dividend payment, hence the actual level of dividends is still irrelevant.

Taxation policies in many economies treat dividends differently to capital gains and hence may create distorted incentives for companies either to pay out or retain profits purely due to the particular taxation environment. Normally dividends are taxed heavily for the average individual investor, thus giving companies an incentive to pay lower dividends. However in many cases different classes of investors are also taxed differently with some being completely tax exempt, some being more highly taxed on dividends (high income individuals) and some more highly taxed on capital gains (companies). This further complicates the picture because it makes high dividend paying stocks less attractive to some investors but more attractive to others.

The good news is that many governments do seem to be trying to reduce some of the distortions but, if capital markets are functioning efficiently, these different groups of investors will buy and sell shares as their attractiveness changes. Thus, as mentioned in Chapter 4, the composition of the shareholder body of a company may change as the financial strategy unfolds; the more predictable this strategy is, the easier it is for the investors to buy and sell at a fair price. Such distortions also encourage companies to find ways around the tax disincentives of paying cash dividends; this may be achieved by offering stock (or scrip) dividends, where instead of cash the investor receives extra free shares in the company, or by repurchasing an equivalent value of existing shares from shareholders. These methods are considered in more detail in Chapter 13.

A very important issue in assessing the theory on dividend policy is to see how companies actually set their dividend policies. Based on the evidence, the most common policies seem to be to pay out a constant proportion of post-tax profits (‘to give the shareholders their share of the returns achieved by the company’), to attempt to maintain, or grow at a steady rate, the value (sometimes in nominal and sometimes in real terms) of the dividend stream, or preferably to do both of these.

Research by Lintner in 19567 indicated that companies have a target dividend payout ratio, but that they never actually pay that full amount. He suggested that companies determine their annual dividend based on the following formula:

$$DIV_1 - DIV_0 = a[(r \times eps_1) - DIV_0]$$

where $DIV_0$ is the dividend paid last year, $DIV_1$ is the dividend to be paid this year, $eps_1$ is the earnings per share this year, $r$ is the target dividend payout ratio, and ‘$a$’ is an adjustment factor.

Equation A1.7 shows how the dividend changes from one year to the next. With a target payout ratio of $r$, the company would pay a dividend of $(r \times eps_1)$. However, it does not pay this full amount, as the directors try to ‘smooth’ the trend in dividend payments over time. Accordingly, the ‘ideal’ payout is adjusted based on how different it is from the dividend in the previous year. The adjustment factor of ‘$a$’ is company specific, and would depend, *inter alia*, on the directors’ confidence in the sustainability of future profits.

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Appendix 2: Valuing options and convertibles

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INTRODUCTION

In this Appendix we explain the different types of option and the terminology used in discussing options, and review the principles behind option valuation. Because convertible financial instruments, as discussed in Chapter 12, include an option component, we then go on to examine the valuation of convertibles.

OPTIONS TERMINOLOGY

An option is a contractual right to buy or sell something at a particular time in the future, or during a given future period, at a fixed or specified price. Options can be divided into two basic types; a call option gives its owner the future right to buy, while a put option provides the future right to sell. The key to the value of options is that ownership conveys the ‘right’ to do something, that is, the choice of whether to exercise the option is left to the owner, who can instead choose to do nothing, letting the option lapse.

Sellers of options have to meet their contractual obligations. The seller of a call option must deliver the asset in exchange for the agreed payment (known as the exercise or strike price) if required to do so by the buyer of the call option. The seller of a put option must pay the agreed price to the buyer of the put option if the asset is offered (put) to the seller.

All options contracts are made for a specified time period but there are two ways in which the contract may be determined. Under what is known as an American option, the owner can exercise the option at any time during the period of the contract; whereas under a European option exercise is only allowed at the maturity of the contract. In most cases, because remaining time to expiry has a positive impact on the value of an option, the differences do not have a major impact on the prices of option contracts but, theoretically, European options are much easier to value.

VALUING OPTIONS

The factors relevant to option pricing are: the exercise price, the volatility of the underlying asset, the current price of that asset, interest rates and the time to expiry. Each of these terms will now be explained, together with a discussion of how and why they affect the option value. All of the explanations of value that follow relate to call options, the right to buy an asset. A moment’s reflection will tell you how put options – the right to sell – would differ.

The exercise price, also known as the strike price is the price that will be paid to exercise the option to acquire the asset. Working insight A2.1 illustrates this.

Volatility is the variability in the asset price. Its impact on option valuation is illustrated in Working insight A2.2.

The asset price is the current price of the asset over which the option has been granted. Working insight A2.3 illustrates how this impacts the price of a call option.
Impact of the exercise price on call option valuation

Shares in Company A are trading at £10 per share:
1. You are offered the option to buy the share two years in the future at £11.
2. You are offered the option to buy the share two years in the future at £15.

Option 1 is obviously more valuable. So, the exercise price is an influence on the value of the call option – the lower it is, the more the option is worth.

Impact of volatility on call option valuation

Shares in Company B and Company C are both trading at £10 per share, and you are offered an option to buy them at some point in the future at £11.
1. In the past three years Company B shares have traded between £5 and £15.
2. In the past three years Company C shares have traded between £9.90 and £10.10.

The option over Company B is more valuable. There’s little point in having an option to buy an asset if the volatility is so low that its price is unlikely ever to reach that level. With Company B, there’s a good chance that you’ll be able to make a profit on exercise.

On the other hand, the downside volatility is irrelevant: whether the share price falls to £10 or down as far as £1, the option holder will not exercise an out-of-the-money option. Options are a one-way bet.

So, the greater the volatility, the more the option is worth.

Impact of the asset price on call option valuation

You are offered the option to buy a share in Company D or Company E at £11.
1. The current share price of Company D is £6.
2. The current share price of E is £10.

The option over Company E is more valuable – you have the option to buy a more valuable asset. So, the price of the underlying asset is a factor in valuing the option.

Later in this section we will introduce the Black–Scholes formula for valuing options. However, at this point it is worth noting another piece of terminology relating to option values. The intrinsic value is the difference between the asset price and the exercise price. This could be at one of three states.
If the intrinsic value is positive (e.g. a call option at £10 to buy an asset currently trading at £11) then the option is said to be *in-the-money*. If option price and asset price are the same, the intrinsic value is nil and the option is referred to as *at-the-money*. Finally, the asset price could be lower than the option price – you would not wish to exercise the call option at £10 if you could buy the share for say £8. Such options are known as *out-of-the-money* or colloquially as *underwater*.

Continuing with our discussion of factors that affect value, the level of the *risk-free interest rate* also needs to be taken into account in option valuation, as shown in Working insight A2.4.

One final factor affects option valuation – the *time to expiry*. This is illustrated in Working insight A2.5.

Working insight A2.6 summarizes the five factors affecting call option valuation, and also demonstrates how these same factors affect the value of put options.

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**Working insight A2.4**

**Impact of interest rates on call option valuation**

For some unspecified reason, you know that you are going to need to own a share in Company F in two years time. You have the funds available to buy it now, but if you delay the purchase you will invest the funds in government gilts. You are offered the option to buy a share in Company F for £11 in two years time.

1. If interest rates are currently 4%, then you could set aside £10.17 now, which will attract interest to compound to £11 in two years time, when you need to buy the share.
2. If interest rates are currently 10% then you could set aside £9.09 now, and the compounded interest will take this to the required £11 in two years time.

Accordingly, the interest rate is an important factor in valuing call options – the higher it is, the more the option is worth. (Many people find this counter-intuitive, but it does make sense once you follow the logic through.)

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**Working insight A2.5**

**Impact of time to expiry on call option valuation**

Shares in Company G are trading at £10 per share.

1. You are offered the option to buy the share in a month’s time at £11.
2. You are offered the option to buy the share in two years time at £11.

Obviously the two-year option is more valuable – there’s more chance that the share price will exceed £11 in two years than in one month. So, time to expiry is another influence on option price: the longer the time to expiry, the greater the value.
One further factor affects the value of options over shares. Shares pay dividends, so the shareholder will receive the dividend, but the owner of a call option over the share will not. So, the higher the dividends a company is paying, the less the value of a call option over its shares (and obviously the opposite applies to a put option).

### OPTION PRICING MODELS

These valuation characteristics were brought together in the famous option pricing model developed by Fischer Black and Myron Scholes in 1973\(^1\). They used some sophisticated mathematics which is deliberately not reproduced in detail here. They produced a continuous time (i.e. using integration calculus rather than discrete binomial models) option pricing valuation model which showed:

\[
\text{Call option value } = P_0 N(d_1) - E e^{-tK_f} N(d_2)
\]

where \(P_0\) is asset price now, \(E\) is option exercise price, \(K_f\) is risk-free discount rate (continuously compounded), \(\sigma\) is standard deviation of the return on the asset, \(t\) is time to maturity of option,

And

\[
d_1 = \frac{\ln(P_0/E) + K_f t}{\sigma \sqrt{t}} + \frac{1}{2} \sigma \sqrt{t}
\]

and

\[
d_2 = d_1 - \sigma \sqrt{t}
\]

---

and \( N(d_1) \) and \( N(d_2) \) are cumulative probabilities for a unit normal distribution, which is defined as having a mean of zero and a standard deviation of 1. Mathematically, this can be shown for

\[
f(y) \text{ as } N(d_1) = \int_{-\infty}^{d_1} f(y) dy
\]

(the area under a normal distribution curve).

This formula looks fairly mind blowing and yet its application is relatively straightforward, particularly using tailored computer software. It is even easier when using sets of call option valuation tables; these give the call option value as a percentage of the current asset price. Not surprisingly given the earlier discussions, the tables utilize two factors; the time value represented by \( \sigma \sqrt{t} \) and the asset value ratio, which is the current asset value divided by the present value of the option exercise price.

The problem with the Black–Scholes formula is not that it is complicated but that it is, as with many financial formulae, based on a series of restrictive assumptions. It represents the value of a simple call option on an asset which produces no income stream during the life of the option (such as a non-dividend paying share in an equity-financed company). However many real-life options are actually complex options on options; for example a share in a leveraged company could be described as a call option on the underlying assets and future cash flows of the business, so that an option on a share is really an option on an option. The Black–Scholes model does not handle complex options.

A further complication is that the standard deviation of the return on the asset can itself change over time and can only really be measured historically, when it is the expected future volatility that is required. Empirically it has been found that this model tends to price options wrongly where the exercise price is a long way away (either way) from the current asset price, undervaluing deep in-the-money options and overvaluing deep out-of-the-money options.

(It should be noted that another model has been subsequently developed in 1979 by Cox, Ross and Rubinstein\(^2\) and independently by Rendleman and Bartter\(^3\), which encompasses the Black–Scholes model as a particular continuous time case. This is known as the binomial option pricing model, not surprisingly because it uses multi-period binomial distributions to drive the option valuation.)

---

**STRUCTURING AND VALUING CONVERTIBLES**

As explained in Chapter 12, convertibles are financial instruments that start out as debt (or preference shares) but give the holder the option to convert into ordinary shares of the company. Because of this, we value convertibles


Appendix 2: Valuing options and convertibles

COSMIC plc: Using a convertible

COSMIC plc wants to raise £100 million in long-term financing for a project which will take some time to become significantly profitable and cash positive. Accordingly the company prefers not to raise either debt or equity and is considering using a convertible.

The current post-tax cost of debt for COSMIC is 6% compared to the risk-free rate of interest at 4%. At present COSMIC has a total of 1,000 million issued shares with a market price of 50p per share. Its forthcoming results are expected to show earnings per share (eps) of 4p and dividends per share of 1p; in addition to the current dividend yield it is known that shareholders expect capital growth of 12% per annum.

Using Gordon’s dividend growth model, the company’s cost of equity capital can be calculated as 14% as follows:

$$K_e = \frac{D_1}{P} + g$$

$$= \frac{1p}{50p} + 12\%$$

$$= 14\%$$

based on both their bond value and their option value. In this section we show how the variables of yield and potential capital gain can be combined to produce a convertible bond that is attractive to the markets.

In Working insight A2.7 we set out the parameters for COSMIC plc, a growth company which seeks to raise £100 million using convertible debt.

It can be seen from Working insight A2.7 that the majority of the investors’ expected return in COSMIC plc comes from the capital growth of 12% per annum This implies that current shareholders expect the price of the shares to have doubled to 100p in six years time ($1.12^6 = 2$), provided that the current 75% retention policy is maintained during this period.

The future expected share price is important as it determines, from the existing shareholders’ perspective, the level at which the conversion price should be set. Any conversion price below 100p in six years time should represent an expected gain to the option holder, because that level of increase in value is already effectively expected by current investors.

The company is considering issuing a six-year convertible and the first alternative is to issue £100 million of a 7% six-year convertible unsecured loan stock. At the end of the six-year period, the loan stock can either be redeemed at par or it can be converted into ordinary shares at a price per share of 85p; that is, a total of 117.65 million new shares will be issued.

The company has an effective tax rate of 30% which is the same as its major investors, so that for both parties the post-tax return on the debt portion of the convertible is 4.9%. However, from Working insight A2.7 we know that investors require an 6% yield on debt issued by COSMIC plc. This enables the
Valuing the bond part of a convertible

The redeemable bond portion is simply valued at the present value of its expected future cash flows, assuming redemption at maturity, but using the appropriate full cost of debt as the discount rate rather than the yield actually offered on the bond. For COSMIC plc this gives:

\[ K_d = 6\% \]

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash flow</th>
<th>Discount factor</th>
<th>Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–6</td>
<td>£4.9 million</td>
<td>4.917</td>
<td>£24.1 million</td>
</tr>
<tr>
<td>6</td>
<td>£100 million</td>
<td>0.705</td>
<td>£70.5 million</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Net present value</td>
</tr>
</tbody>
</table>

From Working insight A2.8 we can see that the bond portion of the convertible should be valued by the market at £94.6 million. However, the company wishes to raise £100 million. Thus the conversion option must be designed to have a present value of at least £5.4 million in order to fill the gap.

The equity option can be valued by the investors in a number of different ways but its exercise has an opportunity cost of £100 million in total because, by exercising their conversion option, the investors forgo their right to redeem their bonds at par. Thus the option will not be exercised unless the share price increases above 85p. Remember however that the share price is expected to increase to 100p during this period; this would leave the convertible holder with a capital gain upon conversion into equity.

Technically the Black–Scholes option pricing formula does not work properly for options on options, which is what a convertible is (remember that a share represents a call option on the assets of the company), particularly when dividends are paid on the shares. However, developments and variations of the formula are widely used in financial markets so that this practice will be followed here. The option valuation can be simplified by employing the key value drivers and call option valuation tables; this requires calculating the intrinsic value of the option and the time value.

The time value of the option depends on the time to maturity (note that this is a simple European option as it can only be exercised at maturity) and the expected volatility of the share price during the option period. We will assume that the standard deviation of the return of COSMIC plc is 0.25. Based on these parameters, the calculation of the option value is shown in Working insight A2.9. This demonstrates that the option value should have a present value of £8.1 million which can be added to the bond’s present value of £94.6 million.
If we add the £8.1 million option value calculated in Working insight A2.9 to the £94.6 million bond value shown in Working insight A2.8, we arrive at a total value for the convertible of £102.7 million. In practice, this would enable the company to raise its required £100 million and pay the expenses of the issue.

By now, it should be clear that in corporate finance there are, at best, usually only zero sum games, so where does the extra value of 2.7 million come from?

Looked at from the current investors’ point of view there is a saving created by the reduced rate of interest for the six-year life of the bond element of the convertible; this has a present value of £5.4 million. Therefore the current investor can afford to give away an equity option with a present value of £5.4 million and be made no worse off as a result of this financing structure.

In order to keep the rational convertible investor happy, this £5.4 million present value of the option has to increase by at least 14% per annum (the full cost of equity must be used because no dividends are received on the option). As shown in Working insight A2.10, this gives a required year 6 value of
Corporate Financial Strategy

£11.9 million for the equity option. This can be added to the redemption value of the bond which is the convertible investor’s opportunity cost, that is, if the value of the equity offered at the time of conversion is less than £100 million, redemption will take place in preference to conversion.

However, the option will be exercised in year 6 so, in order to have a present value of £5.4 million, it should have a year 6 expected value of £5.4 million × (1.14)⁶ or £11.9 million.

(Note: The expected return on options may be slightly higher than the normal cost of equity to allow for the higher risk perception of investors in the option.)

Desired equity total value at end of year 6
Redemption value of bond £100.0 million
Expected value of equity option £11.9 million
Equity value to be issued £111.9 million

Current shareholders expect share price to be 100p in year 6. So, from their perspective, £111.9 million of equity value in year 6 can be satisfied by offering to issue 111.9 million shares. This gives an option exercise price of:

\[
\frac{100\text{ million}}{111.9\text{ million}} = 89.4\text{ p}
\]

from the perspective of the convertible holder.

(Note: Strictly speaking existing shareholders could still be marginally worse off after granting this option; they want the share price after the option exercise to be kept at the 100p which they are currently expecting in year 6. Allowing 111.9 million new shares to be issued at 89.4p would reduce the average share price below this desired level; however, in an efficient market the earlier saving in financing costs should have boosted share prices above their expected levels.)

£11.9 million for the equity option. This can be added to the redemption value of the bond which is the convertible investor’s opportunity cost, that is, if the value of the equity offered at the time of conversion is less than £100 million, redemption will take place in preference to conversion.

From the shareholders’ perspective, this can all be achieved by offering to issue 111.9 million new shares in year 6, which implies a conversion exercise price of 89.4p per share (Working insight A2.10). This price would leave current investors indifferent, and should make the convertible bond just attractive to the new investor.

If more attractive investment terms than 89.4p are offered, the transaction becomes less than break even from the current shareholders’ viewpoint unless the issue generates greater proceeds. In other words the £2.7 million in the first structure has been achieved at the expense of existing shareholders, as the equity conversion option has been made more attractive (85p rather than 89.4p) but only £100 million has been received by the company. However, this
is not unreasonable – the shareholders always end up paying the effective cost of new fund raising.

The basic valuation model has made a number of simplifying assumptions, several of which have been mentioned in the above discussion. However, one important issue has not yet been considered. The equity conversion option, if exercised, automatically will lead to an increase in the total issued shares of the company in five years time, but no new funding will be made available to the company at that time. It has been assumed that the exercise of the equity option does not lead to a decline in the value of all the existing shares; such a decline would also decrease the capital gain achieved by the conversion. If the financial market can properly value the convertible (through its component parts) prior to its conversion, there should be no such change – but this is a big ‘if’. Remember, the valuation of traded equity options is different to the situation of a convertible, as the exercise of a traded option does not result in an increase in the total number of shares in existence; the shares required under the option contract are either already owned or must be bought in the market.

ANOTHER WAY TO VALUE CONVERTIBLES

In the above discussion, the convertible in the example was kept very simple and restrictive; a six-year fixed term with the exercise of the conversion option only being allowed at the end of the term. In practice companies issuing convertibles like to offer potential investors more alternatives, as they see this as making the investment more attractive. One way of making any investment involving an option more attractive is to extend the life of the option: for example, a 15-year convertible might appear better than a six-year time period. However, the other part of the convertible is a bond which carries a below-market rate of interest; thus the longer the life of the bond, the lower its present value.

Normally it is uneconomic for the company to increase the value of the option at the expense of an equal decline in the bond value, due to the different effective costs of capital used by investors to value each element. Therefore companies are constantly looking for ways to increase the value of the option without an offsetting decline in the value of the bond, or vice versa. One common way of increasing investor flexibility is to allow conversion of the bond into equity within the life of the convertible; an American option, of course, has this ability to exercise the option at any time already built in. In many UK convertible issues, conversion is allowed on a specified date each year or for a stated number of years prior to the expiry of the convertible when, if conversion has not been requested, redemption takes place.

In theory for a normal option, this extra flexibility should have no real impact because an unexpired option always has a time value; thus it should be financially more attractive to sell the option rather than to exercise it before maturity date. However, convertibles have a complication because shares can receive a dividend yield, while the unexercised options do not. This means that there may be an opportunity cost associated with not exercising the option within its lifetime. There is an offsetting cost associated with exercising the option
because the yield on the convertible bond or preference share will be lost once the conversion option is exercised.

This trade-off has led to the development of a different method of valuing certain convertibles, which is commonly described as the ‘dividend cross-over model’. The model basically assumes that, as long as the market price of the

### Example of use of a dividend cross-over model

The current share price of Slowing Growth Inc is 100 p. Its expected dividend yield is 4%; the dividend and capital value are expected to grow at 8% per annum. The company has recently issued a 10-year convertible redeemable preference share which has a 5% fixed dividend yield and the right to convert into ordinary shares at any time at a price of 125 p per share.

Thus £100 of convertible preference shares can convert into 80 ordinary shares. The company wishes to use a dividend cross-over model to value these convertible preference shares. The full company rate for debt is 6% and for equity 12%. (Tax is ignored in this example.)

Assuming conversion of £100 of convertibles into 80 shares, the equivalent alternative equity investment today is to buy 80 shares (i.e. an investment of £80).

#### Equivalent 80 shares investment

<table>
<thead>
<tr>
<th>Year</th>
<th>Expected dividend payment per share</th>
<th>Discount factor at 12%</th>
<th>Present value</th>
<th>Dividend yield on 80 shares</th>
<th>Discount factor at 6%</th>
<th>Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.0 p</td>
<td>0.893</td>
<td>285.7 p</td>
<td>320 p</td>
<td>0.943</td>
<td>275.5 p</td>
</tr>
<tr>
<td>2</td>
<td>4.3 p</td>
<td>0.797</td>
<td>275.5 p</td>
<td>346 p</td>
<td>0.890</td>
<td>345.0 p</td>
</tr>
<tr>
<td>3</td>
<td>4.7 p</td>
<td>0.712</td>
<td>265.7 p</td>
<td>373 p</td>
<td>0.840</td>
<td>361.8 p</td>
</tr>
<tr>
<td>4</td>
<td>5.0 p</td>
<td>0.636</td>
<td>256.2 p</td>
<td>403 p</td>
<td>0.792</td>
<td>336.0 p</td>
</tr>
<tr>
<td>5</td>
<td>5.4 p</td>
<td>0.567</td>
<td>247.0 p</td>
<td>435 p</td>
<td>0.747</td>
<td>325.3 p</td>
</tr>
<tr>
<td>6</td>
<td>5.9 p</td>
<td>0.507</td>
<td>238.2 p</td>
<td>470 p</td>
<td>0.705</td>
<td>315.3 p</td>
</tr>
<tr>
<td>*7</td>
<td>6.3 p</td>
<td>*N/A</td>
<td>N/A</td>
<td>*508 p</td>
<td>*N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>6.9 p</td>
<td>0.48 p</td>
<td>N/A</td>
<td>548 p</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>7.4 p</td>
<td>0.42 p</td>
<td>N/A</td>
<td>592 p</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>8.0 p</td>
<td>0.37 p</td>
<td>N/A</td>
<td>640 p</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Total present value 1568.3 p

*Shows where conversion becomes logical.

#### £100 nominal convertible investment

<table>
<thead>
<tr>
<th>Preference dividend yield</th>
<th>Discount factor at 6%</th>
<th>Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 p</td>
<td>0.943</td>
<td>471.7 p</td>
</tr>
<tr>
<td>500 p</td>
<td>0.890</td>
<td>445.0 p</td>
</tr>
<tr>
<td>500 p</td>
<td>0.840</td>
<td>419.8 p</td>
</tr>
<tr>
<td>500 p</td>
<td>0.792</td>
<td>396.0 p</td>
</tr>
<tr>
<td>500 p</td>
<td>0.747</td>
<td>373.6 p</td>
</tr>
<tr>
<td>500 p</td>
<td>0.705</td>
<td>352.5 p</td>
</tr>
</tbody>
</table>

Total present value 2458.7 p

**Difference in present value** = £8.90

**Plus equivalent investment cost at present value**

\[
\text{Present value} = £88.90
\]

**Deemed minimum value of redemption put option (balancing figure)**

\[
\text{£11.10}
\]

**Total value of convertibles**

\[
\text{£100.00}
\]
share is above the exercise price of the option, conversion will take place when
the opportunity cost of the foregone dividend exceeds the yield on the bond
or preference share. Thus the value of the convertible can be calculated as the
present value of the equivalent equity investment made now plus differential
cash flows received in this period up to conversion plus the value of the put
redemption option should conversion never take place.

This is at first sight a complex issue, but can be made much clearer using
an example. The case of COSMIC plc is not appropriate to this situation, as it
would not be expected that the dividend in that high growth company would
exceed the interest yield during its six-year life. Accordingly a new, more appro-
priate example is given in Working insight A2.11.

The logic of the cross-over valuation model is to consider the investment in
the convertible as an investment in a deferred equity, in that the investor could,
as an alternative investment, buy an equivalent number of shares today. If the
shares are bought now, the investors receive dividends and make capital gains
from 100p (or make losses if the value falls). These dividends are discretionary
and should therefore be discounted to their present values using the equity cost
of capital. Once these equity dividends exceed the convertible preference yield,
which is fixed, investors will exercise their right to convert (the option should
be ‘in-the-money’ from year 3 onwards using a 8% per annum rate of capital
growth); this conversion is expected to occur at the end of year 6. After conver-
sion, the two investments are exactly the same so there is no need to continue
the comparison.

During the life of the convertible, the fixed preference dividend would be
received and its present value can be assessed using the debt-based rate of dis-
count (6%) due to its non-discretionary nature. The convertible also has the
added attraction that the bond can be redeemed at the end of its 10-year life if
the share price has not risen above 125p. This shows how this method of valua-
tion looks at the convertible in the opposite way to the earlier method; the con-
vertible is regarded as being equivalent to buying the shares today and having
a put option on the bond back to the company.
Appendix 3: Forecasting

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Preparing the forecast 368
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  Include narrative 369
Analyzing the outcomes 369
Sensitivity analysis 370
Behavioural finance 371
INTRODUCTION

Most business activity involves some sort of financial forecasting. We need forecasts to help determine how much money to raise, whether we can afford to pay a dividend, whether to introduce a new product, what price to pay for an acquisition – for pretty much everything, really. The aim of this Appendix is to give the reader an indication of the main issues to consider when preparing financial forecasts. This is not a technical primer, and we do not address topics such as how to use spreadsheets: we focus on obtaining and understanding the numbers rather than manipulating them.

The process of forecast preparation can be broken down as follows:

1. Determine the reason for the forecast and the required timescale.
2. Obtain the supporting data.
3. Prepare the forecast.
4. Analyze what it is telling you.
5. Do a sensitivity analysis.

And then repeat Stages 2 to 5, as appropriate.

Each of these stages is outlined below. We then look at the fascinating area of behavioural finance, to highlight the biases we all have in considering numbers.

WHY DO WE NEED THIS FORECAST?

There are two main types of financial forecast. Monthly or weekly (or occasionally daily) forecasts are used to determine what the cash position will be, in order to ensure that funding will be sufficient for the organization’s needs. The preparation of these should be a regular activity, part of the management information process, and the timetables and information sources should be well understood within the business. This contrasts with forecasts used to support decisions, generally involving annual cash flows over a period, which require some sort of discounted cash flow (DCF) analysis in order to support an investment decision.

The key questions to ask before commencing forecasting are: who needs this information, and why? And, having established this, we should be able to address the next two questions: how accurate does it need to be, and to what timescale?

It is vital to understand these terms of reference. In particular, a clear appreciation of the aim of the forecast will help with the next stage, data collection, as they will enable us to differentiate relevant and irrelevant data.

OBTAINING THE DATA

Supposing is good, but finding out is better.
(Mark Twain)

A forecast is only as good as the data that go into it. Those data can come from sources internal to the organization, or from external sources, or from both; they can be verified, or unchecked; they can be taken from people with a
vested interest in the outcome of the work, or from parties with an interest but no axe to grind, or from those who really don’t care and don’t have the time to help you, anyway.

We won’t insult your intelligence by categorizing the above on a continuum of ‘good’ and ‘bad’ data sources. But we do suggest that, in any report or business plan prepared around the forecasts, you make explicit what sources you used. The supporting data should be non-financial as well as financial. Indeed, it is always best to start with the non-financial information, and only look at the numbers once you have understood the strategic picture. A forecast prepared in splendid ignorance of industry trends and the business environment is unlikely to stand up to scrutiny.

**PREPARING THE FORECAST**

**INCLUDE A BALANCE SHEET**

In 1494 Fra Luca Pacioli wrote his *Summa de Arithmetica*, which included a description of double-entry bookkeeping. He recommended that all transactions be recorded in a systematic way, with a debit and a credit entry, and that the clerk should always ensure that the debits and credits balanced. That was sound advice back in the 15th century, and is still good today.

Generally, financial forecasts are prepared in order to obtain an understanding of cash flows – for example to support a fund-raising exercise or to conduct a DCF analysis. In most cases, the cash flows come out of a forecast income statement, and the underlying data relate to sales and costs, which translate into debtor receipts and creditor payments. However, a problem we see over and again is that people preparing forecasts try to short-cut the process by just preparing the cash flow forecast, or just preparing an income statement and cash flow, but not taking the time to put together a forecast balance sheet.

The advantage of drawing up a forecast balance sheet – quite apart from giving you the ability to analyze same and obtain useful insights – is that it forces the preparer to consider transactions more carefully, for example to match sales and debtor receipts, to take account of inventory movements. Ensuring that the closing line on the cash flow forecast agrees to the ‘bank’ line on the balance sheet gives a logic check. Without preparing an inter-linked income statement, cash flow and balance sheet, you have no way of knowing if your forecast is arithmetically sound.

An example of why it is good practice to prepare a balance sheet can be seen in a proposal reviewed by one of your authors, approached for venture capital funding. The plan indicated that the operation became cash positive after 18 months. The balance sheet, once prepared, indicated that cash was only highly positive because inventories were highly negative!

---

1 However, the fact that your forecasts balance does not mean that they are accurate or reasonable. Arithmetic consistency is a necessary condition for good forecasts, but not sufficient.
INCLUDE NARRATIVE

Most people are more fluent with words than numbers, and would prefer to take in information verbally rather than undertake a detailed analysis of someone else’s spreadsheet. In preparing a forecast or business plan it is vital to include a narrative explaining the assumptions (and to highlight those that are key). A written analysis of the business proposition and the forecast outcomes, together with a discussion of the risks and the possible alternatives is also useful in most circumstances.

ANALYZING THE OUTCOMES

Having prepared the forecast, the next stage is to sense-check it. What is it telling you, and how does that tie in with your strategic analysis?

For example, in a DCF analysis, projects should only be accepted if they generate a positive net present value (NPV). But consider what a positive NPV actually means – it tells you that this project is planned to earn a return over and above the standard cost of capital; it is going to make super-profits. The ability to make super-profits is generally predicated on having a competitive advantage. Thus, whenever you are faced with an investment appraisal that looks good, you should make sure you understand just what competitive advantage is being exploited, and ensure that it really does exist.

Don’t be fooled by small numbers. If your business plan depends on taking ‘only 2% of the market’, you need to understand who is already servicing that 2% and how they are going to react to your entry into the market.

Don’t use the spreadsheet as a substitute for thinking, projecting forward trends over a long period. It is dangerous to extrapolate growth at the same rate year after year. Consider what the total market is for a product, and how soon it will be saturated; think about whether it is feasible for your gross profit percentage to continue to rise annually once the initial savings have been made; critically examine your assumption that inventory days will continue to fall.

The same thinking underlies projects that look bad, but that you know should be profitable. If your strategic and market analysis says that it is a good opportunity, but the NPV comes out negative, then consider what you might have missed out.

For example, a small restaurant chain analyzing whether it would be worthwhile opening another branch in the same geographical area would correctly take account of the fact that some diners coming to that new branch would have switched allegiance from another of its outlets, and would not represent an overall increase in sales for the group. However, another way to look at this is to argue that if this chain does not buy the premises for a restaurant, another restaurateur will open up there. As there is a limit to the capacity, the other restaurants in the area would lose business anyway, and so that is not relevant to this decision. This analysis with a declining base case is illustrated in Figure A3.1.

Finally, always be aware of the limiting factor in your forecasts. For most businesses the limiting factor is the level of sales – all other assumptions hang
from that. But in some businesses it might be the availability of skilled labour, or the size of the factory. (One of your authors once prepared a very complex spreadsheet to support the valuation of a distribution business. The underlying assumptions came from three separate directors. It was only when the numbers were presented back to them that the logistics director pointed out that the volumes being predicted by the marketing director were physically impossible to achieve from premises of the size they occupied. This led to some tension in the meeting, and to a major change in the company’s strategic plans.)

Prediction is very hard; especially about the future\(^2\). Almost the only thing you know for certain about the forecasts you have prepared is that they will be wrong. What is important is to understand how wrong they are likely to be, and whether or not it matters. This is where sensitivity analysis comes in.

Sensitivity analysis involves changing one or more of the forecast variables, and seeing how that impacts upon the outcome. There are at least three ways to approach it, the first of which – by far the most widely followed – is intellectually the least satisfactory.

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\(^2\) This aphorism has been variously attributed to Mark Twain, Niels Bohr and Yogi Berra. And probably to many others.
Many people do sensitivity analysis by changing the variables (e.g. sales, materials costs) by 10%, either individually or in parallel, and seeing what happens. The reason that this is intellectually sloppy is that there is no logic behind the choice of 10% other than the fact that it is easy. For a start-up project, making a forecast of sales volume that is within 10% of the final outcome would be an impressive achievement; for an existing company, being 10% out on a forecast of production costs would be unusual.

Accordingly, a more satisfactory approach is to change each of the underlying variables – individually or in parallel – by an amount that reflects the level of uncertainty you have in your estimates. That might involve flexing the sales volumes by 40% but the labour costs by only 5%. This more accurately mirrors the uncertainty you face.

Another way to do sensitivity analysis is to turn it on its head. Instead of asking ‘how wrong am I likely to be?’, ask ‘at what point does an error make the project unviable?’ So, if a forecast is showing a positive NPV, how much would sales have to fall for the NPV to be zero? How much would costs have to rise? Calculate each of these, and then go back to the original source for the estimate and ask what their level of confidence is.

For example, if a fall in sales of 23% would strip all of the value out of a project, go back to the sales and marketing departments and explore with them how their forecasts were determined. It might be that their estimates are deliberately on the low side, so an additional 23% decline is unlikely. It might be that some targeted market research could give a better feel for what is happening. Whatever the result, at least you are facing the decision with a better understanding of the risk.

Also, don’t forget that changes in variables can interact with each other. An increase in interest rates will increase finance charges, but may also reduce sales; a fall in demand will reduce sales, but may also cause increases in material prices, as economies of scale are lost. And don’t forget to test what happens if sales increase rather than decrease – quite often, this is what leads to a cash crunch.

Working insight A3.1 illustrates the ways in which variables might be flexed to determine sensitivities.

One outcome of the sensitivity analysis is a better understanding of the critical success factors for the business – which of the value drivers really matter. Another outcome, when preparing a cash flow forecast to support borrowing requirements, is that it gives an idea of how much to request. If your base forecast shows a borrowing requirement of £1 million, then asking just for £1 million shows poor judgement – work out what the worst case looks like and make sure that you have capacity to borrow at least up to this level. (You needn’t borrow that amount – that would be inefficient use of capital – but it is useful to have the headroom for further borrowing if it is needed.)

BEHAVIOURAL FINANCE

When you have to make a ‘blue skies’ forecast, with no prior knowledge of the subject, where do you start?
One of our favourite pieces of research is described by Amos Tversky and Dan Kahneman. They showed that we all use a limited number of heuristic principles to help us cope with complex number-related decisions. Working insight A3.2 summarizes what they had to say about ‘anchoring and adjustment’; the process whereby we fix on a number and then just make small alterations up or down from it.

Anchoring and adjustment is one example of behavioural finance, a fascinating area of study that examines how we behave towards numbers. It has much significance for the practice of corporate finance. On a small scale it illustrates why we approach sensitivity analysis by moving only 10% away from our original estimates. A more fundamental issue is how we can use anchoring to set expectations on a deal price, with the aim of getting the other party to adapt our initial offer rather than re-examine from first principles.

Other behaviours of which you should be aware are the tendency of forecasters to be over-optimistic, and over-confident in their abilities (both as forecasters and as entrepreneurs); and the very human desire to seek out data that support our initial views and ignore data that might prove us wrong. (Commercial examples of these tendencies can be found in pretty much every business plan we have ever reviewed.) People also tend to evaluate probabilities based on their resemblance to other situations rather than

<table>
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<tr>
<th>Driver of value</th>
<th>Some examples of changes to explore</th>
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<tr>
<td>Sales</td>
<td>Decrease or increase by x per cent; slow the sales growth plan by one year, or two years; assume selling prices fall more quickly than planned.</td>
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<td>Profit margin</td>
<td>Change input costs individually; assume that margins do not increase as much as anticipated; look at the effect of a movement in the ratio of fixed and variable costs.</td>
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<td>Tax rate</td>
<td>Flex the tax rate.</td>
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<tr>
<td>Working capital</td>
<td>Change the assumptions for inventory days, debtor days and creditor days.</td>
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<td>Capital expenditure</td>
<td>Examine the impact of price changes in the future, and of delaying or bringing forward capacity changes.</td>
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<tr>
<td>Timescale of competitive advantage</td>
<td>Run the forecast for one year more, or one year fewer, to see the impact. Change the terminal value assumptions in a DCF analysis.</td>
</tr>
<tr>
<td>Cost of capital</td>
<td>Flex the cost of capital, and the timing of interest payments and loan repayments where appropriate in a forecast to evaluate funding requirements.</td>
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An example of anchoring

Tversky and Kahneman reported an experiment whereby participants span a wheel of fortune, containing the numbers 1 to 100. They were then asked to indicate whether the percentage of African countries in the United Nations was higher or lower than the number obtained from the wheel, followed by their estimate of the percentage.

The wheel of fortune was rigged, so that it produced either a high result or a low one.

Although the rational readers of this book will appreciate that there is no possible connection between a wheel of fortune and the African constituents of the UN, the experiment showed that the participants ‘anchored’ their predictions on the wheel of fortune. So, for example, those whose wheel showed 65 indicated that African countries made up some 45% of the UN; those who saw the wheel land on the number 10 took the view that, on average, it was 25%.

The impact of framing on decisions

150 people were asked to indicate their preferences in the following pair of choices. The numbers in brackets show how the participants voted.

Chose between:
A  A sure gain of $240 (84%)
B  25% chance to gain $1,000 and 75% chance to gain nothing (16%)

Chose between:
C  A sure loss of $750 (13%)
D  75% chance to lose $1,000 and 25% chance to lose nothing (87%)

For decision A–B the majority choice is risk averse, even though the expected outcome is slightly lower than taking the gamble; for decision C–D the majority choice is risk-seeking.

looking at the raw data, and to avoid ambiguity, even at the risk of being ‘certainly wrong’.

One further bias is relevant. The way in which a decision is framed will influence our view of the risks. People seem to have more of a desire to avoid losses than to make gains. This has significant implications for the behaviour of

managers faced with a choice of whether to wind up a poor project, or to throw good money after bad in the hope of recovery. It also means that executives will find it easier to forego a discount than to accept a surcharge, even though the financial outcome could be the same. Working insight A3.3 illustrates this.

Understanding the issues in behavioural finance is valuable to the corporate financier. Knowing how you think can improve your success in forecasting. Knowing how others think can improve your business acumen. If this brief insight into the subject has whetted your appetite, many other sources are available, such as behavioralfinance.net.
Glossary of selected financial terms

**A**

**ADR (American Depository Receipt)** A bearer security issued in the US which represents a block of securities of a non-US company.

**Agency theory** A theory which considers ways to limit the divergence of goals between shareholders (principals of the company) and directors (their agents, who run the company).

**Annuity** The receipt or payment of the same sum of money each year for a given number of years.

**B**

**Basis point** 0.01%.

**Beta** A measure of risk compared to the market. The equity beta is the beta of the company’s share. The asset beta reflects the business risk.

**Bond** A long-term debt.

**Bonus issue** An issue of shares to existing shareholders made by capitalizing retained profits. No cash is transferred, and shareholders end up holding the same proportions of the company as they did before the issue.

**Business risk** Risks related to the volatility of operating results, before financing.

**Buyback** Also known as a share repurchase, this is where the company acquires its own shares.

**C**

**CAPM (capital asset pricing model)** A method of calculating a company’s cost of equity by using the risk free rate, the company’s beta and the market premium.
Convertible  A financial instrument that starts as a debt or preference security, but gives the holder an option to convert into ordinary shares instead of being repaid.

Cost of capital  An average of a company’s costs of equity and debt (and other forms of finance such as preference shares), weighted in accordance with their relative values in the capital structure.

Covenant  A clause in a loan agreement giving the lender the right to call in the loan if conditions are breached.

DCF (discounted cash flow)  A way of evaluating a stream of future cash flows as if they all took place immediately – it allows for the fact that money in the future is worth less than money now.

Deep discount rights issue  A rights issue at a share price considerably below the current market price.

De-listing  The opposite of flotation – when a listed company goes private.

DGM (dividend growth model)  A method of calculating a company’s cost of equity capital by taking the dividend yield and the expected future growth in dividends.

Discount rate  The rate used to discount future cash flows. Often a company’s cost of capital, suitably risk-adjusted, is used as the discount rate.

Due diligence  The investigatory work undertaken by a prospective acquirer or lender prior to an investment being made.

Economic profit  The surplus earned after deducting all expenses, including the cost of capital.

Envy ratio  In a leveraged transaction, the ratio of the private equity capitalization to the management’s capitalization of the company. Capitalizations are calculated as the amount invested by each party, divided by their percentage share of the equity.

eps (earnings per share)  The profits available to the ordinary shareholders divided by the number of ordinary shares outstanding.

Exercise price  The price at which an option may be exercised.

Financial risk  Risks related to a company’s financial structure (see Gearing).

Flotation  The act of listing a company on a public stock market. Also known as an initial public offering.

Fundamental value  The value of a share calculated based on its fundamentals: projected cash flows discounted at a risk-adjusted cost of capital. The value of a company (or a share) calculated by discounting its forecast future cash flows.

Gearing  The relationship between a company’s debt and equity. Also known as Leverage.

High-yield debt  Previously known as ‘junk bonds’ this is debt which is rated below investment grade.
Intrinsic value  The difference between an option’s exercise price and the price of the underlying security. Could be ‘in-the-money’, ‘at-the-money’, or ‘out-of-the-money’ depending on whether the exercise price is below, the same as, or above the asset price.

IPO (initial public offering)  Another term for flotation.

IRR (internal rate of return)  The discount rate which, when applied to all of the cash flows to be generated by a project, results in a net present value of zero. If the IRR exceeds the company’s criterion discount rate, this is an indication that the company is returning greater than its target rate.

Junk bonds  High-yield bonds, with a credit rating lower than BBB – (Standard and Poor’s rating) or Baa (Moody’s rating).

Leverage  Gearing.

LIBOR (London Inter Bank Offered Rate)  A benchmark rate used in determining corporate interest rates.

Ltip (long-term incentive plan)  This is normally for executive remuneration.

Market capitalization  The market value of a company’s equity, calculated as the current share price multiplied by the number of shares outstanding.

MBO (management buy out)  A transaction in which the company’s management acquire the company, often financed by private equity.

Merger  Combination of two or more companies of approximately equal size.

Narrow discount rights issue  A rights issue for which the rights price is only slightly lower than the market price (see also Deep discount rights issue).

NPV (net present value)  The sum of the present values of all positive and negative cash flows associated with a project. A positive NPV implies that the project is making a return in excess of the discount rate used.

Option  The right, but not the obligation, to do something. A call option gives the holder the right to buy a given security at an agreed price at a specific time; a put option gives the right to sell. Options which have a specific date on which they can be exercised are known as European options; those which can be exercised over a given period are known as American options.

P/E  The Price/Earnings ratio is the company’s current share price divided by its earnings per share.

Payout ratio  The dividend paid to ordinary shareholders as a proportion of the profits available for ordinary shareholders (payout ratio = 1 – retention ratio).

Perpetuity  The receipt or payment of the same sum every year forever.
**Perpetuity value of a share**  The value justified by the current level of earnings per share.

**Poison pill**  A specific bid defence tactic which makes the target company less attractive to the bidder.

**Preference gearing**  The use of preference shares in a private equity transaction in order to increase management’s proportion of the equity.

**PVGO (present value of growth opportunities).**  The amount of the current share price that is not supported by existing earnings.

**R**

**Ratchet**  A means to increase or decrease management’s proportion of the equity in a private equity transaction based on the achievement of certain results.

**Retention (plowback) ratio**  The retained profits of a company as a proportion of the profits earned for ordinary shareholders (retention ratio = 1 – payout ratio).

**Return on investment**  Profits before financing charges (and often before tax) divided by the total funds (debt and equity) invested in the business.

**Rights issue**  An issue of shares to existing shareholders, generally at a price below current market value.

**Risk**  Volatility in the expected return.

**RoE (return on equity)**  Profits available for ordinary shareholders divided by the company’s equity.

**S**

**Securitization**  The process of converting assets or future cash flows into a marketable security.

**Security (1)**  A financial instrument.

**Security (2)**  Lenders can gain security by taking a charge over assets such that the assets can be used to repay their loan if the company fails.

**Steady state**  A company in steady state is neither growing nor contracting. This is a theoretical construction, unlikely ever to occur in practice.

**T**

**Tax shield**  The reduction in the company’s tax burden due to debt interest being tax-deductible. Calculated as the interest charge multiplied by the tax rate.

**TSR (total shareholder return)**  The percentage return to shareholders in a period based on the dividends received and the increase in the share price over the period.

**U**

**Underwriting**  An arrangement whereby a financial services company agrees to acquire the shares in a listing if they are not taken up by other shareholders.

**V**

**Value multiple**  The market value of a share divided by its fundamental value.

**W**

**WACC (weighted average cost of capital)**  See Cost of capital.
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## Discount table: present value of £1

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Discount table: present value of £1 received annually for N years
Discount rate
Years 1%

2%

4%

5%

6%

8%

10%

12%

14%

15%

16%

18%

20%

22%

24%

25%

26%

28%

30%

35%

40%

1
2
3
4
5

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<th>28%</th>
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</table>
### Black–Scholes value of call option expressed as a percentage of the share price

**Share price divided by present value of exercise price, that is S/PV(E)**

| S/PV(E) | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 | 0.85 | 0.90 | 0.95 | 1.00 | 1.05 | 1.10 | 1.15 | 1.20 | 1.25 |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0.00    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.05    | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 | 0.85 | 0.90 | 0.95 | 1.00 | 1.05 | 1.10 | 1.15 | 1.20 | 1.25 |
| 0.10    | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 |
| 0.15    | 0.15 | 0.30 | 0.45 | 0.60 | 0.75 | 0.90 | 1.05 | 1.20 | 1.35 | 1.50 | 1.65 | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 | 4.20 | 4.40 |
| 0.20    | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 | 4.20 | 4.40 | 4.60 | 4.80 | 5.00 |

Square root of cumulative variance, that is $\sqrt{\sigma^2}$
| Note: Values in the table represent percentages of the underlying share price: for example, 40.4 denotes a call option worth 40.4 per cent of the underlying share price. | Values in the table were computed from the Black-Scholes option pricing model. | Reprinted with permission from Corporate Finance Europe by Buckley, Ross, Westerfield and Jaffe. McGraw-Hill, 1998. |
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