MERGERS, ACQUISITIONS AND CORPORATE RESTRUCTURING

Edited by
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Preface

In recent years, worldwide, Mergers and Acquisitions (M&A) volume has been averaging US$ 2 trillion. Deals running into several billion dollars are not uncommon. In 2006, Mittal Steel of UK, for example, made a US$ 23 billion bid for Arcelor of France, creating the biggest steel company in the world accounting for 10 per cent of the world's steel production. The rise in volume and size of deals has increased the need for sound practical frameworks for the analysis and structuring of transactions. This book focuses on the purchase and sale of equity, and the design of consideration in mergers and acquisitions. The book comprises modules on searching for acquisitions, value drivers and target valuation, design of consideration, a real options perspective of mergers and acquisitions, accounting and tax factors, cross-border acquisitions, and the restructuring of equity and debt contracts.

This book is intended for students with an interest in the financial, strategic and business issues surrounding corporate restructuring. Far from being a rare event, corporate restructuring has become a permanent affair on the corporate landscape. Corporate restructuring is the process by which a firm renegotiates contracts and claims that it has entered into with its various constituencies such as stockholders, creditors, employees, suppliers, customers and governments. The book will show students how to deal with and profit from the acquisition or restructuring opportunities that they will encounter in their careers.

The specific kinds of restructuring presented in the book include corporate spin-offs, equity carve-outs, targeted stock offerings, bankruptcy, reorganizations and workouts, and downsizing programmes.

Educational Objective

The aim of this book is to provide a rigorous understanding of valuation in a variety of settings. Though the book considers the perspectives of all participants in an acquisition/restructuring, the focus is on the managers of the company being restructured. After going through this book, a

reader should be able to value and structure an acquisition/restructuring opportunity.

In particular, the book tries to answer the following questions:

- When does it make sense to restructure a firm's operations?
- What kind of restructuring is most appropriate for addressing particular problems or challenges facing the firm?
- How much value will the acquisition or restructuring create?

Target Audience

This book is meant to be used in a standard Mergers, Acquisitions and Corporate Restructuring course in an MBA programme, although students of other professional programmes like CFA, CA and ICWA would find it useful. This book is suitable for those who are seeking a career in investment banking, general management, strategy consulting, securities analysis, turnaround management, commercial banking and investment management. The book can also be used in executive education programmes such as Acquisitions and Alliances as well as Corporate Restructuring.

Acknowledgements

No book is the result of individual effort. Over the years, we have taught in many universities all over the world. Our thinking has been shaped by discussions with colleagues. This book belongs as much to them as to us. We thank our colleagues and students who have helped us in bringing out this volume. Special thanks are due to the contributors who have made this book possible.

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Diversification via Acquisition

K. Sankaran and Vishwanath S.R.

CHAPTER OBJECTIVES
- Provides a rationale for diversification as a strategy
- Highlights the different types of synergy in an acquisition
- Summarizes research on diversification

An acquisition is the purchase by one company (the acquirer) of a substantial part of the assets or securities of another (the target company). The purchase may be a division of the target company or a large part (or all) of the target company's voting shares. The purchase can take on two forms: a merger proposal or a tender offer. A merger proposal involves negotiation with the target company's managers (directors). If the managers approve the proposal, the shareholders then vote on the proposed deal. A tender offer, in contrast, involves making a direct offer to the target company's shareholders. The shareholders can decide whether to tender or not. Since tender offers do not require approval of the target company's managers, they are termed as hostile takeovers.

The aggregate number of transactions in the United States (US) has risen dramatically in the late 1990s, with the value of transactions reaching US$ 1.3 trillion in 1999 (Exhibit 1.1) The value of cross-border acquisitions in the world in 1999 was US$ 720.1 billion. Exhibit 1.2 presents the top 10 cross-border Mergers and Acquisitions (M&A) deals completed during 1987–99. Until recently, corporate acquisitions have played a much less prominent role in Asia and Europe than in America.

EXHIBIT 1.1
M&A activity in the US

No. of Deals

Year 1970–2002

------- Year ——— Deals

Value of Deals

Year 1970–2002
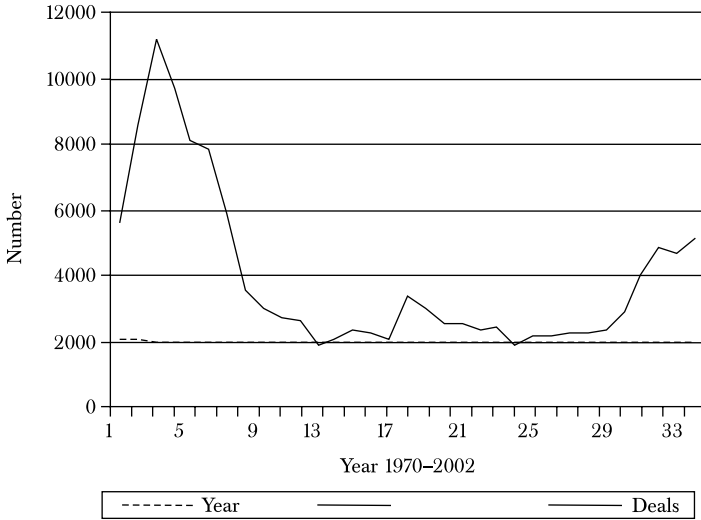
-------- Year ——— Value (US$ billion)
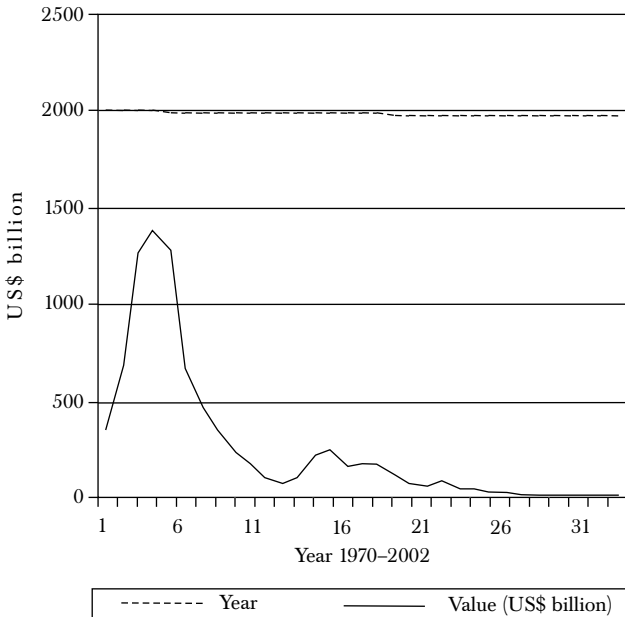
EXHIBIT 1.2			
Top 10 cross-border M&A deals completed during 1987–99			
Year	*Acquiring company*	*Acquired company*	*Value (US$ billion)*
1999	Vodafone Group LLC	Air Touch Comm.	60.3
1998	British Petroleum	Amoco Corp.	48.2
1998	Daimler-Benz	Chrysler Corp.	40.5
1999	Zeneca Group	Astra AB	34.6
1999	Mannessmann	Orange Plc	32.6
1999	Rhone-Poulenc	Hoechst AG	21.9
1998	Zurich Verischerungs	BAT Industries	18.4
1999	Deutsche Telecom	One 2 One	13.6
1999	Repsol SA	YPF SA	13.2
1999	Scottish Power	Pacific Corp.	12.6

Source: United Nations 2000 World Investment Report.

Indeed, a large fraction of acquisition activity is concentrated in the US. The trend is now changing. Several factors are responsible for the increase in acquisition activity in the rest of the world. Many countries in Asia and Europe had restrictive takeover regulations that discouraged foreign companies from acquiring. Lately, foreign companies have been allowed to acquire controlling stakes in many countries. The ceiling on foreign shareholding in South Korea, for example, has been increased from 55 per cent to 100 per cent. Likewise, Indonesia has eased restrictions on foreign shareholding in banks. Conglomerates that diversified into unrelated areas where they had no unique skills dominate many countries in Asia and Latin America. Competition and increased expectations from customers and investors are forcing these companies to shed non-core businesses. The Chaebol in Korea, for example, has been forced to scale down operations. Many of these countries are also dominated by public sector undertakings that are usually less efficient than their private sector counterparts. The governments in these countries do not have the financial capacity to fund these companies. Consequently, privatization programmes are underway in many countries. The privatization of a company can be achieved by a 'strategic sale' to a private party.

Why are Takeovers Needed?

The market for corporate control or the takeover market is a market in which alternative owners (bidders) compete for the rights to manage

(under-performing) companies. The shareholders of the target company can exercise the choice of selling their shares to the highest bidder. Managers in many large corporations do not own a significant fraction of shares because of which they do not have the incentive to act in the interests of shareholders.[1] Further, large companies are typically owned by a large number of small investors who do not have the incentive to monitor managers' performances because of which managers may get away uncontested. In the absence of a control mechanism, managers waste resources (Jensen, 1986). The job of the market for corporate control is to discipline erring managers.

Acquisitions are often viewed as convenient means to growth. Many economists and industrial organization theorists allege that managers pursue acquisitions at an unfair cost to the shareholder. According to this view, it is the shareholder, and not the manager, who is better placed at investing capital in alternative businesses. These theorists argue that reckless managers aggrandize themselves with extravagant acquisitions—a result of breakdown of agency trust that shareholders repose in their managers.

While there is some merit in this argument, there is no evidence to prove that managers of the bidding company are systematically harming shareholders to build empires. Indeed, there is evidence to the contrary. The stock price increases to target companies come from the value obtained by putting the target company's assets to better use. Acquisitions are an important vehicle by which managers grow companies or enter new lines of business. Consider the example of Viacom. The company increased its revenues from less than US$ 1 billion in 1986 to over US$ 11 billion in 1995; a huge 1000 per cent growth in less than 10 years! This colossal task would not have been possible in such a short time but for acquisitions, given the time it takes to nurse new projects from inception, create brand awareness, form networks and information links, internalize the soft skills of innovation and service delivery.

In this book, we ask the question, 'What can companies do to enhance the combined value of acquiring and target companies?' In the rest of

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[1]In addition, the link between pay and performance is apparently weak in US companies. See Jensen and Murphy (1990).

this chapter, we discuss the internal and external factors that facilitate and necessitate takeovers.

Traditional View of Diversification

For several decades in corporate boardrooms as well as in academic circles, the 'portfolio' framework dominated corporate strategy analysis. The term 'portfolio', borrowed from finance literature, represents the mindset of the corporate planner: businesses are like securities that could be strategically traded in the market for corporate control. In such a scenario, business units are independent and clearly separate, providing no place for anything like co-operation and synergy between them.

Under this view, the corporation would act as a central bank to optimally utilize cash flows among strategic business units (Williamson, 1991b) while simultaneously minimizing the risk of 'having all eggs in one basket'. Besides the financial control that the 'bank' metaphor presupposes, there is also management control that the corporate office exercises over the business units. According to Porter (1987), these controls include evaluation of performance of the business units in a dispassionate manner, and key top management appointments including, but not restricted to, the business head. As opportunistic as the firm is, the corporate office would be specialized in scanning the environment for identifying the right takeover targets and subsequent pre-merger activities such as negotiations. Financial and management control provides the rationale for portfolio-type corporate strategy.

Another rationale for acquisitions is that superior performance can be created by a strategy of clever entry in new product-market segments that seek a 'fit between the firm and its new product-market' (Ansoff, 1965: 75). This argument followed the disappointment with conglomerate diversifications of the 1960s, which proved to be less fulfilling than anticipated (Shleifer and Vishny, 1991). This notion of fit was the harbinger of a research tradition in which researchers attempted to find out what type of diversification leads to superior performance. Rumelt (1974) found that related diversification provided better performance than either unrelated or narrowly focussed diversification. This was a significant contribution coming at the time of the Chandlerian debate on the direction of causality implied in the strategy-structure debate that is, whether strategy follows

structure or vice versa. Rumelt's findings confirmed that 'diversification strategy' is an important antecedent decision variable impacting performance independent of the structure of the firm and its external environment. However, Rumelt himself indicates that viewing strategy as the fundamental cause for all facets of firm performance, divorced from other issues, would be naive.

The resource-based view of the firm offered another rationale for the firm to diversify. Originally suggested by Penrose (1959), it came to be reinterpreted and reapplied in the management literature (Wernerfelt, 1984). The resource-based view of the firm seeks not only lower costs due to better production processes, but also the capability to combine and apply resources and internal strengths into unique strategic assets (Peteraf, 1993). This required firms to look inwards as well as outwards for survival and growth. Inter-firm heterogeneity offers the answer to firm performance, and acquisitions should seek such advantages that could help build up inimitable and immobile resources (Amit and Shoemaker, 1993; Hart, 1995).

Synergy: The Key to Improved Performance

According to many researchers, the notion of *synergy* offers the explanation (Ansoff, 1965; Chatterjee, 1986). It captures the creation of additional value, through a co-operative process between two entities, over and above the value that existed prior to such a process. What is represented by the cliché 'two plus two equals five' offers an idealized alternative to the individualistic pursuit of profits by narrowly-focussed strategic business units. Still, notwithstanding the concept's popularity, conceptualizing the full range of potential synergy types has been extremely elusive, both from the theoretical and the empirical viewpoints.

Defining Synergy

Although synergy is theoretically purported to be the intervening variable between diversification strategy and post-merger performance (Chatterjee, 1986), it is not generally treated as such by empirical researchers for lack of a proper definition. They have generally defined synergy as contiguous with diversification strategy, thus providing little additional information –a notable exception being Chatterjee (1986). He examines the performance of acquiring and acquired firms based on synergy types. He correctly points out that there has been a tendency among researchers to connect a

certain type of mergers and acquisitions with a synergy type on a one-to-one basis. Alluding to this tendency, he writes (p. 123): 'The equivalences imply that there is no difference between the type of mergers and the type of synergy. Unfortunately, mergers, in general, are unlikely to fit into such a classification'.

Matching synergy types on a one-to-one basis with diversification types is trivial and provides little or no new information. Seemingly aware of the problem, Chatterjee (1986) attempts to match diversification and synergy types on an *a priori*, non-trivial, basis by defining them as *collusive*, *operational* and *financial* synergies. However, he neither clearly defines the underlying general concept of synergy, nor does he clearly distinguish synergy from resources. He further undermines the strength of his study by dropping one type of synergy (collusive synergy) in trying to clean up the sample for empirical evaluation, thus reducing it to a comparison between operational and financial synergies only.

Notwithstanding these problems, Chatterjee's research was a starting point in the empirical measurement of synergy. It is interesting to note that he called into question the rationale for empirically correlating diversification/acquisition type and performance without questioning the underlying causes for the match.

Components of Synergy

What are the perceived sources of additional value the firm(s) would potentially enjoy following a merger or acquisition? Or in the words of Amit and Shoemaker (1993): 'What are the rents available to the combined corporation following the merger due to the complementarities of the assets?' From a broad literature survey, the following traditional and positioning-related synergy types or levels were extracted (Sankaran, 1993).

- Level A: Economies of scale
- Level B: Economies of scope
- Level C: Economies due to competitive positioning
- Level D: Economies due to corporate positioning
- Level E: Economies due to financial strategy

These five levels correspond to different theoretical perspectives that justify mergers. The broader theoretical and practical underpinnings of so-conceptualizing synergies are summarized in Table 1.1.

TABLE 1.1
Components of synergy

Synergy levels	Underlying discipline	Theoretical thrust	Characteristics			
			Root metaphor of organizations	Tactical objectives	Main resource entailed	Tactical use in planning
Economies of scale	Microeconomics	Perfectly-contestable markets	Agglomeration of machines	Maximize efficiency	Machines and equipment	Materials and resource planning
Economies of scope	Industrial organization	Theory of the multi-product firm	Group of professionals/ knowledge workers	Maximize efficiency	People and knowledge	R&D planning (in a more comprehensive sense, knowledge management)
Economies due to competitive positioning	Competitive strategy	Game theory	Deployment of functional combat units	Maximize effectiveness	Market position and intelligence	Competitive analysis of industry
Economies due to corporate positioning	Corporate strategy	Transaction cost theory	Nexus of contracts	Maximize effectiveness	Contractual arrangements and credible commitments	Organizational environmental analysis
Economies due to financial strategy	Finance	Portfolio theory	Collection of near-liquid assets	Optimize use of near-cash assets	Liquid assets	Analysis of industry and SBU prospects

The first two levels are typically related to enhancement of efficiency. The role of environment is minimal according to these perspectives. On the other hand, the next two levels relate to striving for greater effectiveness, which automatically posits a dynamic environment. And finally, the last level relates to a portfolio approach to corporate strategy.

Before we go on to explain the various levels, it is pertinent to point out that the strength of the approach would be enhanced by incorporating a *second* defining dimension for the basic components we seek to describe. This dimension comes from a central consideration of systems theory and operations management, and refers to the three basic stages of any process. The idea is implicit in Porter's (1985) notion of 'value chain' and has been occasionally suggested by management scientists. For instance, Nadler (1970) and Darter et al. (1988) indicate that organizational studies ought to explicitly spell out the specific stage of value creation being considered. On the basis of this suggestion, we make differentiations between *input* activities, *process* operations and *output* activities. This stage-wise differentiation (or the IPO framework) provides us with the second defining dimension to cross-classify mergers against the five synergy levels.

Having uncovered five synergy levels and three stages within each, there would be 15 possible synergy subtypes or *components* for examining synergies available in acquisitions. A summary of synergy components is shown in Table 1.2.

A. Economies of Scale

A major benefit of diversification is the economies of scale (Gold, 1981; Hill, 1988). According to Bowers and Rowntree (1938), economies of scale come from two sources. The first source is found in oversized production facilities: the excess capacity permits a reduction in average cost when fixed overhead cost is spread over additional units. The second source of economies of scale appears when the capacity of the production unit (or infrastructure) is expanded in such a way that the larger one is more intrinsically efficient than the smaller one. This latter form of potential savings is often explained in terms of the more restricted notion of 'economies of size' (Collis and Montgomery, 1997). It is apparent that mergers and acquisitions may often give rise to the savings due to the two sources of economies of scale, especially the former.

TABLE 1.2
Synergy modes and the IPO framework

Synergy mode	Stages of the IPO framework		
	Input stage	Process	Output stage
Economies of scale	Economies of scale in sourcing	Economies of scale in operations	Economies of scale in sourcing
Economies of scope	Transmission of knowledge in sourcing	Transmission of knowledge in operations/ technology	Transmission of knowledge in distribution and marketing
Economies due to competitive positioning	Increasing bargaining power over suppliers	Erecting barriers to entry in operations	Increasing power over existing buyers and customer outreach
Economies due to corporate positioning	Greater control over suppliers through backward integration and so on	Internal strength due to corporate integration	Greater control of markets through integration
Economies due to financial strategy	Availability of capital	Decreased cost of capital	Smarter retention of cash

Table 1.2 provides the summary details of economies of scale. Under the classical equilibrium condition of perfectly competitive markets, the firm is assumed to be operating in a market with constant returns to scale, implying therefore no economies of scale. In a refinement to this, the possibility of increasing or decreasing returns to scale are recognized by the perfectly contestable market analysis of Baumol et al. (1982). The perfectly contestable market accommodates for a restricted number of suppliers, unlike the perfectly competitive markets with innumerable suppliers. Under this view, though the firm can achieve advantages over the competitors through economies of scale, there is precious little it can do to influence the environment. In this scenario, the major assets of the company are the productive assets of the company. Plant and machinery become the key resources of the company, with maximization of efficiency, the key organizational goal. The firm's planning function would concentrate upon material resource planning.

Given the fact that economies of scale could arise at various stages of the IPO framework, the following synergy components can be identified.

1. *(INPUT) Economies of scale in sourcing*: Following a merger, when the combined corporation buys any input material(s) in quantities larger than what the units had purchased singly earlier, there is potential for realization of economies of scale in sourcing. The argument is that buying in larger quantities helps the firm reduce the unit cost of warehousing, storage and purchasing administration. Any savings thus achieved require that there exist centralized purchasing, warehousing and storage facilities following a merger. Mergers among retail chains provide a common example.

2. *(PROCESS) Economies of scale in operations*: Economies of scale in operations are achievable when the merged corporation is able to reduce its unit cost of any intermediate/final product or service, following a merger, due to the increased quantity being produced. Theoretically, economies of scale in operations are achievable in the main activity of production, as well as in the support activities such as engineering, prototyping, product testing and quality control. Economies of scale are available to a large number of industries (Carlino, 1978).

3. *(OUTPUT) Economies of scale in distribution and marketing*: Economies of scale in distribution are achievable when unit costs of transportation, warehousing and insurance are lowered with respect to the output(s) of the corporation after the merger. Consolidation of firms can potentially ensure that larger lot sizes can be shipped out, thus saving money on a per-unit basis. If the unit cost of market planning, market research, advertising, and such other elements of the marketing mix is lower for the corporation following a merger (at the same level of overall marketing involvement), the corporation has achieved synergy due to economies of scale in marketing. As an example, corporations benefit from such synergies when they undertake 'corporate' advertisements following a merger, the idea being to promote a number of products through a single advertising copy.

B. Economies of Scope

Another form of savings the combined corporation may potentially enjoy is grouped under the category of economies of scope (Baumol and

Blinder, 1982). According to Baumol and Blinder, cost advantage occurs to the firm when it is cheaper to produce a number of different products together rather than separately by different firms. In other words, joint production often reduces the unit cost. The notion is that economies of scope could spring from the opportunity to exploit advantageous features unused in some subsets of the production systems of one or the other of the merging firms, or that some intermediate function is shared by two or more product lines without complete congestion.

This points to economies of scale for an intermediate function. In an expanded sense, the intermediate function may be intangible (Godfrey and Hill, 1995) in essence (such as knowledge), which could potentially enhance the innovative ability of the combined firm (Teece, 1987). Such factors are subsumed under what Teece (1982) refers to as organizational knowledge. This organizational knowledge is closely linked to the resource-based view of the firm according to which the company, by combining knowledge in innovative ways, is able to gain competitive advantage (Barney and Zajac, 1994), or a dynamic theory of the firm based on its knowledge (Spender, 1996).

The notion of economies of scale is also closely linked to the theory of the multi-product firm (Teece, 1980, 1982). A discussion of opportunities for potential economies of scope in corporate strategy at the input, process and output (IPO) stages of production follows:

4. *(INPUT) Transmission of knowledge in sourcing*: If one of the merging firms involved in a merger is able to benefit from the other in the system(s) adopted for purchasing input materials, there is transfer of sourcing knowledge. This could manifest itself in improved negotiations with suppliers and material-ordering procedures or any other increased overall efficiency in the purchasing function.

5. *(PROCESS) Transmission of knowledge in operations/technology*: Following a merger, if either of the merging firms is able to transmit know-how in operations to the other, there arises synergy. This could be in manufacturing technologies, such as just-in-time (JIT) or flexible manufacturing (FMS) technologies, product design, benchmarking, prototyping, testing or quality control. Ford's transfer of know-how to Jaguar is an example (Maremont, 1990).

6.   *(OUTPUT) Transmission of knowledge in distribution and marketing*: When the merger results in either of the firms being able to gain knowledge about distribution practices from the other firm resulting in cost savings, synergy is realized. Following a merger, this could manifest itself in actions such as realignment of market channels, re-zoning of markets, and the like. Following a merger, if one of the firms is able to draw upon the expertise of the other in terms of market segmentation, consumer tastes, advertising prowess and such others, there is a realization of synergy due to transmission of know-how in marketing.

C. Economies due to Competitive Positioning

Diversification can be an effective means of competitively positioning the firm in the market place (Porter, 1984). Following Porter (1980), there are three major players in his worldview of the business organization: buyers, suppliers and competitors (including potential entrants). Although primarily a tool of 'corporate' strategy, diversification may also enhance the combined firm's position with respect to any of these players. These are likely to be collusive (Chatterjee, 1986) and may be concentric or a related diversification (Lubatkin and Lane, 1996; Porter, 1984; Rumelt, 1974). Economies due to competitive positioning could lead to greater bargaining power to make more favourable decisions on production levels and pricing, leading to higher profits or profitability.

The metaphor 'competitive positioning' is marked by opportunistic behaviour by the firm. In the scale/scope-based efficiency paradigm, organizational environment is assumed to be largely placid and actions by the firm are deterministic in the quest for efficiency. The principal actions there could be characterized as economizing rather than strategizing (Williamson, 1991b). In 'competitive positioning', the firm is characterized by opportunistic behaviour in a dynamic environment. Moves and countermoves by the protagonists could result in positioning benefits to the firm (Dyer, 1996). Table 1.1 provides a link between competitive positioning and Game Theory.

The following definitions describe the three IPO stages of value creation with respect to the synergies associated with competitive positioning:

7. *(INPUT) Increasing bargaining power over suppliers*: Increased bargaining power over suppliers is possible when firms consolidate. Such mergers have the effect of rendering the existing suppliers having to deal with one larger, combined firm rather than two separate firms. The consolidated firm offers better bargaining vis-à-vis the suppliers due to size effects. For instance, Kuhn (1986) reports on how General Motors' size allowed it to enter into a 'requirements contract' with its suppliers. This meant that the company did not have to buy specified quantities; it had to buy only what was needed to maintain current production.

8. *(PROCESS) Erecting barriers to entry in operations*: This type of synergy is seen as the economic rents realized by those firms that protect their turf from potential entrants who may otherwise be attracted to the industry and pose competitive challenges in the future. This could be effected through shared patents, licensing, and exclusive arrangements between the acquiring and the acquired firms. Indirectly, barriers could also be erected by other means that make the industry less attractive to potential entrants, as pointed out by Porter (1984, 1985). These factors are: (*a*) increased firm size, (*b*) manufacturing flexibility and (*c*) increased cost-efficiency.

9. *(OUTPUT) Increasing bargaining power over existing buyers and customer outreach*: Increasing bargaining power is achievable when firms consolidate. The consolidation could lead to a more pronounced oligopoly and, ultimately, to a monopolistic situation. Acquisitions provide an opportunity to obtain the initial foothold in a new geographical area, thereby gaining new customers; otherwise, this may have been time-consuming or nearly impossible. The diversification strategy of Procter & Gamble at the global level is a case in point. In its globalization thrust, Procter & Gamble acquires firms in the host country, who offer all the support it needs to become a leader in the local market (Chase, 1987), thereby saving time in overcoming local regulatory and infrastructural delays that mark internal venturing in foreign countries. This kind of synergy is also achievable in domestic market expansion.

D. Economies due to Corporate Positioning

'Corporate positioning' may involve attempts to reduce environmental uncertainties by including them within the organization's boundary.

The traditional form of corporate positioning is vertical integration. The acquiring firm widens itself, so to speak, to subsume a former environmental element. This kind of control would be beneficial where the market exchanges are inefficient or involve transaction costs, as argued by Williamson (1975): hierarchies are internal structural arrangements for control and compliance, which replace market exchange. Building on Coase's (1937) theory of the firm, Williamson (1975, 1991a, 1991b) argues that M-form corporations result when the transaction costs exceed those associated with the internal hierarchy. The degree to which the various stakeholders are 'included' within the organizational boundary will be a critical issue (Liebeskind, 1996; Mowery et al. 1996); also important are the decisions as to which units are to be acquired and which are to be divested.

Yet there are other cases where the inclusion is partial, such as joint ventures, licensing and so on (Dyer, 1996; Gerlach, 1992). The emphasis is on the analysis of the trade-offs between the cost of creating and maintaining the hierarchy and the cost of transacting with its environment. The major objective of the firm is to be effective through deals and contracts. For diversifying firms that seek the advantages of corporate positioning, contractual arrangements and commitments become the most sensitive resource that can be acquired or harnessed through a merger. Metaphorically, the firm could be viewed as a 'nexus of contracts'. The IPO stages are used to express the possibilities of synergy here too.

10. *(INPUT) Greater control of suppliers through* **backward** *integration*: This form of synergy is best understood by explaining what happens during vertical integration. A firm vertically integrating backwards is adopting a 'make' decision in preference to a 'buy' decision; this results in the firm sourcing materials at a point further up the value chain.

11. *(PROCESS) Internal strength due to* **corporate** *integration*: This is the most difficult of all the synergy components to conceptualize in western-style corporations. The alternative governance structures proposed by Williamson (1991a) and the benefits accrued from them provide a glimpse into the type of synergy that can be achieved by diversification. It seems as if some of the Japanese conglomerates have been able to create structures and processes

that enhance the internal strength of the corporation via this type of synergy. Nonaka's (1990) 'dynamic cross-functional interaction across functional specializations and divisions' (p. 71) is a useful metaphor to understand synergistic inter-linkages due to corporate positioning. Another Japanese author, Kono (1992), points towards outcomes in the corporate strategy process, which oppose conventional wisdom. He observes that decisions taken by groups exhibit greater degrees of risk (p. 78). Synergistic inter-linkages could potentially be exploited by corporate integration.

12. *(OUTPUT) Greater control of markets through **forward** integration*: Just like the make-or-buy decision, the firm also faces a 'sell' or 'add value' decision when it comes to its outputs. The traditional forward integration gives rise to this form of synergy. Besides full-fledged forward integration, there are other variations possible. Mahoney (1992) cites arrangements such as exclusive dealing, resale price maintenance, exclusive territories and several others, which offer alternate forms of partial forward integration, and denotes them as 'vertical finance ownership'. This also includes acquisition of firms, which enables the corporation to offer the customer a more comprehensive basket of products/services that would enhance the firm's value to the customer.

E. Economies due to Financial Strategy

Economies due to financial strategy do not quite fit into the continuum that can be observed in the synergy levels developed so far. However, this is an important element of diversification strategy in its quest for synergy. This type of synergy is transparent in corporate strategy analysis using the portfolio matrix or its variants. The individual businesses are considered stand-alone units that can be traded in the market for corporate control. This market provides an arena where those SBUs with liquid-assets qualities could be shuffled around for maximum cash returns following an acquisition.

The corporate office will monitor the performance of the divisions and make funding and other resource allocations. In comparison to the

external market, the internal market of an M-form corporation is likely to result in higher constitutional powers to conduct audits and access to the firm's incentive and allocation machinery (Williamson, 1991a, 1991b). Therefore, diversification has the potential to provide synergistic gains following a merger. Not only is there a possible lowering of the cost of capital due to reduced monitoring costs, but also there is a chance of greater availability of capital for one of the merging firms from the other firm. Acquisitions also offer the potential for smarter retention of cash through lesser tax outflow and so on. These aspects lead to the next three potential components of synergy provided by the IPO stages:

13. *(INPUT) Availability of capital*: Diversification could possibly give one of the participating firms access to capital. This is especially true when a cash-rich unit invests in a cash-strapped firm. This type of synergy provides one of the participants the sort of financial resources otherwise not available. The combined firm may also be in a position to leverage the assets to a greater degree, thereby enhancing its debt capacity (Stapleton, 1982). Diversification can also lead to changes in risk (Lewellen, 1971); this could lead to greater availability of funds.

14. *(PROCESS) Decreased cost of capital*: At an overall level, following a merger, there is likely to be a reduction in the cost of capital to the combined firm—there is potential for the transfer of funds from a cash-rich unit to its partner that is currently deficient. Such flexibility and the benefit of *co-insurance* between divisions offer a decrease in the cost of capital (Bergh, 1997; Chung and Weston, 1982; Myers, 1976).

15. *(OUTPUT) Smarter retention of cash*: Diversification could provide opportunities for the retention and growth of cash within the firm. For example, there are a number of mergers and acquisitions that result in lesser tax outflow (Finkler, 1985). Typically, the profits of one of the partners could be offset against the losses of the other. Other financial benefits that fall within this category include advantages due to joint investment of cash proceeds.

Concluding Comments

In this chapter, we described different theories of and the rationale for mergers; why takeovers are needed; and the sources of value in an acquisition. Takeovers can enhance value if there is synergy between the merging entities. There are five levels of synergy. They are:

- Economies of scale
- Economies of scope
- Economies due to competitive positioning
- Economies due to corporate positioning
- Economies due to financial strategy

To make mergers successful:

- Define merger objectives.
- Decide what tasks need to be accomplished in the post-merger period.
- Choose managers from both the companies (and from outside).
- Make them a part of the solution rather than the problem.
- Establish a performance yardstick and evaluate the managers on that yardstick.
- Put them on an attractive P&L incentive compensation plan.

The following chapters present a framework to screen, value and integrate potential domestic as well as cross-border acquisition candidates.

Appendix

US and US Cross-Border Transactions

Top 10 Deals 2002

Rank	Seller	Unit sold	Buyer	Value (US$ million)
1	Pharmacia Corp.		Pfizer Inc.	58,293.81
2	TRW Inc.		Northrop Grumman	7,645.36
3	Qwest Communications	Qwest Dex Publishing	Welsh Carson	7,050
4	Bertelsmann A G	AOL Europe	AOL Time Warner	6,750
5	Golden State Bancorp		Citigroup	5,494.4
6	Rodamco		Simon Property	5,300
7	BCE Inc.	Bell Canada	SBC Comm.	4,136.4
8	Trigon Healthcare		Anthem Inc.	3,607.2
9	AT&T Corp.	Time Warner	AOL Time Warner	3,600
10	Price Waterhouse	PwC Consulting	International Business Machines Corp.	3,500

Source: Mergerstat.

Top Financial Advisors

Ranked by Total Number of Deals

Rank	Total deals advisor	Disclosed deal announced	Value (US$ million)
1	Credit Suisse First Boston	133	70,793.1
2	Houlihan Lokey Howard	94	11,746.7
3	J P Morgan Chase & Co.	85	59,131.3
4	Goldman Sachs & Co.	73	142,472.1
5	Morgan Stanley & Co.	72	49,762.9
6	Lehman Brothers	65	58,158
7	Saloman Smith Barney	59	63,813.6
8	Merrill Lynch & Co.	57	51,148.7
9	UBS Warburg	54	37,471.5
10	Bank of America Securities	46	21,229.5

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2
Searching for Acquisitions

Vishwanath S.R. and K. Sankaran

CHAPTER OBJECTIVES
- Provides a framework for searching for acquisition candidates
- Highlights the types of analyses involved in acquisitions
- Highlights the stages involved in acquisitions
- Discusses strategy development at the target company
- Provides a framework for entering foreign markets through acquisitions

Academic studies indicate that success in creating value through acquisitions in a competitive market is extremely difficult. Jensen and Ruback (1983) highlight this point by summarizing the results from mergers and acquisitions over a period of 11 years. They found that in case of a merger, the average return, around the date of announcement, to shareholders of the acquired company was 20 per cent, whereas the average return to the acquiring company was 0 per cent. Another study by McKinsey indicates that 61 per cent of the 116 acquisitions studied were failures, while 23 per cent were successes. Yet another study suggests that more than half the deals–amounting to US$ 1.5 trillion–fall short of value creation targets. Despite such statistics, why do companies acquire? What should managers do to ensure success in acquisitions? To answer this question, it is important to understand why firms acquire in the first place and who the sellers are. Takeovers can be broadly classified as both friendly

and hostile. The purpose of hostile takeovers is to discipline the under-performing management of target companies. Hostile takeovers address the tendency of managers to waste free cash flow. Friendly takeovers, on the other hand, are aimed at realizing synergy in operations, marketing and R&D. Synergistic takeovers may also lead to a decrease in the cost of capital because the combined entity may be able to borrow at lower rates than stand-alone entities, or the combination may increase the debt capacity or reduce systematic risk.[1] Hostile takeover targets are often poor performers, compared to the acquiring company or other companies in the industry group. They are also less likely to be run by the company's founder or the founder's family. Given below is a list of characteristics of friendly and hostile takeover targets.[2]

	Friendly	Hostile takeovers
Board ownership	High	Small
Run by founder or founder's family	More likely	Less likely
Growth/performance	Comparable	Poor
Tobin's q	Comparable to the target	Low

The BCG Approach to Strategy Development

To decide where to invest, companies typically review the performance of different business units (or products) and invest in those units or products where the growth potential is maximum. The product portfolio analysis pioneered by the Boston Consulting Group (BCG) includes the construction of a growth/market share matrix. Products are plotted in the matrix, with each product represented by a circle whose diameter is proportional to the dollar sales for that product. The matrix has four quadrants as shown next:

[1]The systematic risk (beta) of the Merrill Lynch Conglomerate Index comprising of companies like Martin Marietta, Esmark and 40 others is 0.91, which suggests that conglomerates are less risky than the broader universe of stocks. Fridson, M. and Jon G. Jonsson. 1997, 'Contingent Claims Analysis'. *Journal of Portfolio Management*, Winter. One of the earliest studies by Salter and Weinhold (1978) suggests that diversification does not reduce systematic risk.
[2]Morck et al. (1987).

Growth Rate ↑		
Question Marks	Stars
Dogs	Cash Cows
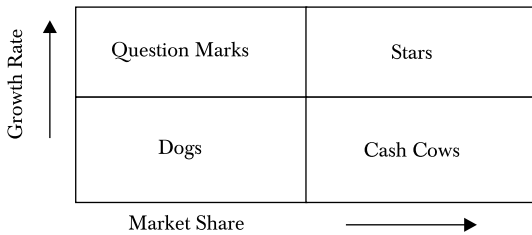
Market Share ⟶

Cash Cows are products that have high market share and slow growth because of which they generate large amounts of cash. Dogs are products with low market share and slow growth, which neither generate nor require substantial amounts of cash. These products require little additional funds to maintain their market share.

Question Marks are products with high growth but low market share, which require large amounts of cash to maintain their market share. Stars are high growth, high market share products which are capable of generating large amounts of cash.

The BCG approach to strategy development involves analysis of the cash flow generation potential of each product and evaluation of the strategy for each product. For example, a company may use the cash generated by cash cows to turn question marks into stars, which in turn become cash cows of the future.[3] To develop a particular product or business, one may put up new plants or acquire companies in the same industry group, or diversify into related or unrelated areas. In his sample of 33 large, diversified corporations, Porter (1987), for example, finds that between 1950 and 1986, his firms entered an average of 80 new industries each and that over 70 per cent of this diversification was accomplished through acquisition, which suggests that growth via acquisition is popular.[4]

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[3]The BCG approach allows managers to circumvent the discipline of the capital markets in the sense that the managers get to decide where to invest on behalf of the investors. In reality, managers may spend money on dogs and starve question marks. So, some point out that it is better for the cash cows to return cash to the shareholders who will in turn decide on where to invest, and question marks should directly access the capital markets on their own merits.

[4]Porter (1987) as quoted in Shleifer and Vishny (1988).

Buying a business involves the following steps:

- Making the initial decision to buy a business.
- Educating oneself on the type of business one wants to buy.
- Determining how much one can afford to pay.
- Searching for potential acquisitions.
- Engaging advisors.
- Evaluating the target.
- Placing a bid on the business in which one is interested.
- Negotiating with the seller.
- Executing a letter of intent with the proposed seller.
- Performing with due diligence.
- Structuring and completing documentation for the purpose.
- Obtaining a contingent financing commitment.
- Signing the purchase agreement.
- Closing the purchase.

The entire process can be split into five phases:

Deal Flow

Lead development	Financial modelling	Site visits	Letter of intent	Due diligence
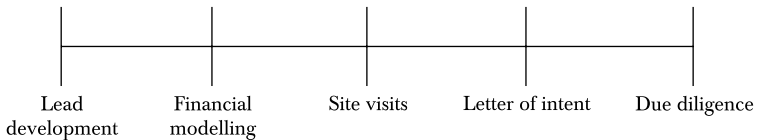
Deal Sourcing through the Internet/Intermediaries

Many companies realize that disciplined acquisition search is the key to success. Allied Signal Corporation, for example, identified 550 attractive potential businesses to be acquired in 1996–97. Of these, 190 targets were selected. Further screening reduced the sample size to 52 firms, from which the company made an offer on 28. Detailed due-diligence research was conducted on 17; Allied Signal consummated 10 of these deals. Perhaps, the all-time record for acquisition search was Ciba-Geigy's acquisition of Airwick Industries in 1974, which was preceded by a review of more than 18,000 companies![5]

One of the important sources of deal flow for an acquirer (at least a large acquirer) is an investment banker. Investment banks have M&A

[5]Bruner (2000).

advisory practices to assist buyers in identifying potential targets, and in valuation, legal, tax, financing and such other matters. Because of their research base and contacts with the business community, they maintain a tab on potential sellers.

Companies seeking to buy or sell businesses are increasingly turning to the internet for research and advertising. Before the advent of the Internet, finding industry information involved pouring through industry databases and articles, and undertaking costly, time-consuming research. Now, with the proliferation of the Internet, companies can access industry data, gather intelligence and locate buyer/seller at minimal cost.

Valuation criteria include a company's assets, industry position, financial status, reputation, management, trade secrets, technology, name recognition and so on. The internet is a useful source of such information. There are web sites developed exclusively for companies wishing to buy and sell their businesses. These websites provide a variety of information like selling prices, as well as articles and advertisements. For instance, one website www.usbx.com contains a list of more than 10,000 buyers and sellers who can be searched by location, industry and other criteria.[6]

Watermill Ventures is a private investment firm that invests in middle-market companies experiencing strategic, operational or financing challenges.[7] Watermill provides access to capital and other resources through its strategic investment partners and its hands-on approach to helping management teams to further develop their strategic and operational practices. Watermill was formed in 1992 through its affiliate HMK Enterprises Inc., founded in 1978. The company provides strategy development expertise and other value-added services. Founded upon the principles of 'professional entrepreneurs', the disciplined management of companies combined with entrepreneurial initiatives, Watermill Ventures helps the management teams of portfolio companies to cultivate an entrepreneurial mindset supported by professional management (strategic planning, budgeting and information technology). This methodology empowers the management to think creatively about their businesses and to explore growth avenues without taking too much risk. WMV's approach is to buy companies, fix them, grow for four to seven

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[6]Also see www.acquisitionadvisors.com

[7]Much of the details on WMV are from its website.

years and then sell or take the company to the public. To source deals, the company has established a website (www.watermill.com). Watermill has been successful largely because of its disciplined screening of industries and businesses and identification of attractive opportunities, combined with strategic and operating attention to portfolio companies. WMV invests in companies in a variety of industries, with a preference for medium growth industries which are experiencing structural change due to new competitive dynamics, new technologies, consolidation or shifts in demand. The company has the following investment criteria:

Sales:	Mid-market
Characteristics:	Moderate industry growth
	Reasonable industry margin
	Market or segment leadership potential
	Under-performing versus potential
	Over-leveraged
	Status of management

Although the Internet is useful for researching and reaching out, many sellers and buyers prefer to work with a business broker who can guide them through the process. These brokers charge commissions ranging from 10 per cent to 14 per cent of the sale price for their services. Business brokers usually restrict themselves to small deals (up to US$ 10 million).

Other intermediaries like LBO firms are also a potential source of deal flow. LBO firms like Clayton & Dubilier, Kohlberg, Kravis and Roberts assist companies in going private. Such firms might be interested in selling a portfolio company if it has satisfied the investment objectives.

Framework for Decision-Making

Acquisition opportunities arrive in a random sequence, which implies that a decision-maker will not have the luxury of comparing one deal with another. Further, it is not possible to value all potential candidates before taking a decision. So, decision-makers need a useful first-cut screening device, which could be any of the following:

- *Size of the target*: Companies often have a range of sizes (in terms of sales or assets) in mind. The target size depends on the investment budget of the acquirer. Large acquirers can afford to pay large amounts

of money, whereas mid-market companies cannot, usually, afford to purchase big companies. A company, for instance, may specify a sales range of US$ 250–300 million. Moreover, all acquirers cannot afford to target companies that figure in everybody's hit list.

- *Target company's competence*: The current management fad is to view a firm as a portfolio of skills and the general prediction is that those firms that align their businesses along those skills will win. Prahlad and Hamel (1990) define core competencies as the collective learning in the organization, especially on how to co-ordinate diverse production skills and integrate multiple streams of technologies. Core competence is not to be confused with core business. Core competence is communication, involvement and a deep commitment to working across organizational boundaries. Core competence is about harmonizing streams of technology. Sony's competence is in miniaturization, Philip's expertise is in optical media and Wal-Mart's expertise is in logistics management. Companies need to stop viewing themselves as portfolios of businesses. The successful companies, even while holding seemingly unrelated businesses, are integrated by a set of common skills. This suggests that companies should acquire strategic capabilities rather than businesses.

- *Profitability/Solvency*: It is not enough if a company meets the size requirement; it should also be sufficiently profitable. Buying a big but bankrupt company is obviously not a good idea unless the acquirer is a vulture investor who specializes in turnarounds. Profitability may be specified in terms of absolute or a range of EBIT or PAT.

- *Asset composition*: Companies derive their value from two sources: assets-in-place and future growth opportunities. Software companies, for instance, derive much of their value from intangible assets like brand name, patents and employee quality. Some acquirers (for example, bio-technology, pharmaceuticals) look for research capabilities and patents, whereas others may look for liquidity of assets (for example, receivables, cash balance to be used in business).

- *Nature of the industry and the company's position*: Companies and industries go through a life cycle just like products. The (future)

growth rate of the company depends on the state of the industry and the company's competitive position. In other words, a growth rate of 15 per cent for a company, by itself does not tell us much, unless we compare it with that of the industry as a whole. Likewise, growth rates are unlikely to be sustainable if the industry happens to be in a declining phase. Acquirers should also find out if the industry is cyclical.

A typical industry life cycle is shown in Exhibit 2.1.

EXHIBIT 2.1
Industry life cycle
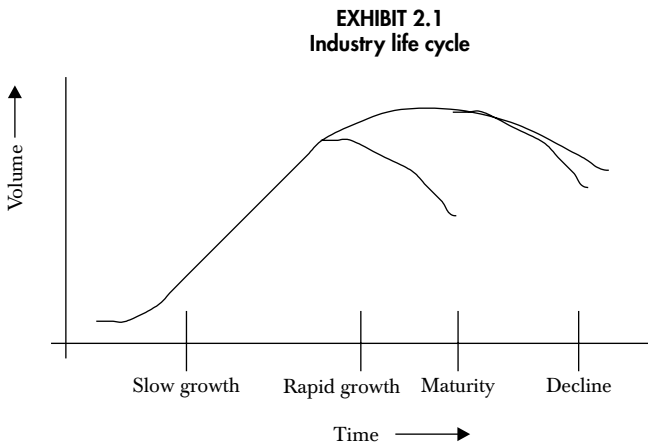
The life cycle has four phases beginning with a period of slow growth, followed by rapid acceleration, maturity and finally decline. When a company reaches a particular point on the life cycle, it may revitalize product lines, giving rise to a new life cycle. Acquirers should be clear about the position of a company in its life cycle, which is difficult. WMV, for instance, concentrates on companies in the third and fourth quadrants, which present turnaround opportunities.

Financial Analysis

As a starting point, acquirers may use relative market share and sales data of the company and peer companies and rank them accordingly on a scale of, say, 0–5 where 0 is the worst and 5 is the best. Such a ranking may be used to screen candidates. For example, one might concentrate

on companies in the range of 3–5. But concentrating on highly profitable and well-managed companies will limit the upside potential in the sense that there is nothing much one can do with such companies. If, on the other hand, one were to acquire a company ranked 0 or 1, there might be upside potential, but so is the downside. In sum, one's aggressiveness depends on one's wealth endowment and risk tolerance.

The financial analysis involves the analyses of Income Statement, Balance Sheet and Cash Flow Statements to gauge how the company has performed in the recent years. More specifically, one can answer such questions as:

- How did the company finance its operations?
- Does the company pay too much or too little as dividends?
- Is the company generating enough cash to support its operations?
- Is the company adequately liquid?

This is both an *ex-post* analysis of past performance and a rough estimate of how the company is likely to perform. The analysis ends in what the company can earn under various states of the world, what the acquirer can pay, what changes (if any) should be made in market capitalization, how the acquisition is to be financed, how much and whether the target can meet interest payments. Typically, acquirers may put a floor above the company's debt service, which the target has to meet under all scenarios.

Strategic Analysis

Once the target clears this hurdle, one might begin with the strategic analysis. The strategic analysis, in contrast with the financial analysis, is supposed to throw light on the current state of the strategy and on what is wrong with it. The analysis leads to the possibilities for repositioning the company and the resources required to implement a strategy. It suggests new segmentation opportunities (that is, segments with maximum growth opportunities) and sources of cost and revenue improvements. It is important to involve the heads of all functions in this phase so that everyone knows what one is getting into and the underlying assumptions behind the acquisition. The story takes shape as one goes through the remaining phases of the transaction.

Site visits and letter of intent: For the story to take a concrete shape, acquirers pay visits to the target's plants and office to get a first-hand feel of what is right and what is wrong with the company. The site visits serve the following purposes:

- To understand the target company's management and operations better.
- Make sure that the assumptions and forecasts which guide the purchase are reasonable.
- Make sure that the company's assets are in good condition.

To elicit information, the acquiring company's officials may meet all the key executives of the target company. If the site visits are satisfactory, the next step in the process is to sign a letter of intent, which provides the acquirer some time to conduct additional research before concluding the deal. Once the letter of intent is signed, one cannot back out of the deal unless under exceptional circumstances. The due-diligence aspect comes next.

Due diligence: Due diligence is a systematic process of acquiring and analyzing information, which helps a buyer or a seller determine whether to proceed with a transaction or not. The information obtained relates to all aspects of the business to be purchased. Due diligence includes assimilating and processing both quantitative information like sales, cash flows and other financial data, and qualitative information like location, quality of management, internal control systems and so on.

The first phase in the process is the preliminary negotiation, which leads to the execution of the letter of intent. The second phase is due diligence. The third phase is the negotiation and signing of the definitive agreement. The final phase is the closing of the transaction. The due-diligence phase is the most critical in the sequence. If the due-diligence aspect is not handled properly, there can be costly surprises, including broken deals.

Due diligence involves the analysis of public and proprietary information related to the assets and liabilities of the company being purchased. The information encompasses legal, tax and financial matters. Due diligence provides the buyer an opportunity to verify the accuracy of the information furnished by the seller. The process helps determine whether there are potential concerns like questionable asset quality, title

of assets, government approvals and so on. For instance, one of the fiercest takeover battles in Europe was fought between Nestle and the Agnellis over the control of Perrier, a French mineral water company.[8] Nestle ultimately won the battle but, to its dismay, discovered that at least one of the springs, which it thought was part of its purchase, was not owned by Perrier, to begin with (it was leased from the town)! When queried, Perrier officials noted that they did not hide the fact; it was just that Nestle had not asked for it! To conduct due diligence, companies typically form a team comprising of personnel from finance, sales and marketing, human resources and tax/legal departments. The personnel review and revise the due-diligence checklist before sending it to the seller. The seller's team conducts an in-house review of all available information and lets the buyer know when, what and how any information will be provided. A typical M&A transaction involves the preparation of a number of agreements and documents between (by) the buyer and the seller. The most prominent being:

- Non-disclosure agreement.
- Letter of intent, which was described earlier.
- Due diligence.

The non-disclosure agreement spells out the definition of 'evaluation material' (any material or information furnished to the recipient) and the use of such material. The agreement prevents the buyer from using that information in an inappropriate manner like public disclosure of the information (even the fact that an agreement has been signed), and it provides for the return of all the materials to the seller upon request. The process ends with the closure of the deal.

Strategy Development at the Target Company

Having completed the deal, the acquiring company has to quickly put in place a business plan for the target company. This becomes trickier, especially when the target company operates in product-market(s) different from that of the parent company.

[8]Sundaram and Dau (1998).

It is useful to start this process by asking the question, 'Which stage of industry life cycle does the business belong to?' As pointed out earlier, a business would fall into any of the four stages: (*a*) embryonic, (*b*) consolidation, (*c*) maturity and (*d*) decline.

The embryonic stage is characterized by a large number of players who have entered the market recently. Unless the product or the service is characterized by high research spends by specialized individual companies (such as the highly specialized Pharmaceutical companies), the embryonic stage of markets would be characterized by industry fragmentation (For example: solar cell manufacturing and installation, wind turbine fabrication and organic fertilizer manufacturing). These industries will continue to have a large number of players, or will be fragmented, until dominant technological and commercial designs emerge when these industries would start consolidating.

In fragmented industries, the firm can best follow focus strategies (Porter, 1980). The focus may be based on customer group, customer need or geographic region. The examples for these three bases would, respectively, be (*a*) expensive vintage wines for connoisseurs, (*b*) geriatric care hospitals and (*c*) rural markets in South America. Focus strategy does not mean that the businesses that follow it remain small. Fragmented industries may not remain fragmented for long. There are numerous examples. Banking is one such industry. In theory, there would be a tendency towards consolidation in cases where a high level of product/service standardization is possible, existing/expected economies of scale are significant and unit transportation cost as a percentage of total unit costs is low.

This brings us to growth strategies. In case the target company is at the stage ready for growth, the following generic strategies are available for growth:

(*a*) *Chaining:* This is usually found in retailing. This is particularly suitable when there are high economies of scale in purchasing, and the company is able to create networks of linked warehouses and merchandising outlets characterized by flexible inter-unit stock transfers.

(*b*) *Franchising:* This would apply when a certain level of standardization is possible, which has not been exploited until now. Franchising

allows for a large number of local units that have individually low investments but collectively high investment outgo.

(c) *Horizontal mergers:* The other growth strategy is horizontal mergers, where the acquiring company does not stop at acquiring the target company but also its competitors, so as to corner a greater market share.

Many target companies may fall at the next stage of the industry life cycle, that is, the maturity stage. Here, the prime objective of the target firm would be to maintain its own competitive position while preserving minimum industry profitability. In many cases, the target company may not be performing up to industry standards. In any case, the strategies available to the firm, whether it is to maintain existing competitive position or to improve, are:

(a) *Identifying product segments that are unoccupied:* In other words, find out niche markets that the industry is not offering the customers. An example would be the cement industry that traditionally offered only dry cement. One way to add value and create a competitive advantage was to offer pre-mixed concrete.

(b) *Managing rivalry:* Rivalry in mature industries can be managed by a combination of price-based and non-price-based measures. Price-based measures include price signalling and price leadership. These measures would usually apply to businesses that are dominant in their respective markets. Non-price-based measures include selective divestment of upstream and downstream activities on the value chain. This happens when the transaction costs are less than the holding costs with respect to activities located at the end of the value chain; this is not unusual for firms in the maturity stage.

The last of the phases is the decline stage. Depending upon the factors discussed earlier, an acquiring company may target a firm that is situated at the decline phase of the industry life cycle. In this case, the available options left open to the acquiring firm are (a) Market Concentration, (b) Asset Reduction or (c) Liquidation. Market concentration leads to narrowing of the customer groups served or the product range. This leads to exiting of marginal niches where the extent of resource freed are significant or existing profit contributions are insignificant, or both.

Resources are concentrated on certain selected niches where the firm can concentrate.

Asset reduction refers to harvesting. There will be a freeze on all significant capital expenditure. Immediate profits are sought at the cost of future investments. Those following the low-cost strategy are likely to pursue such an approach where new investments in plant and machinery would be frozen and the existing equipment 'milked' for minimum production. And finally, the last option is liquidation.

Parenting Strategies

The previous section dealt with crafting the business strategy of the acquired firm, taking into account the industry life cycle, characteristics of the industry (particularly the life cycle stage of the industry in which the firm is located) and competitive dynamics. This is only a part of strategy-making. Even more fundamental is the corporate strategy of the acquiring company. The business strategy of the target firm and the corporate strategy of the acquiring firm have to match. The full value of acquisition can be realized only if there is a match. In other words, a good acquisition presupposes clarity of corporate strategy and, by virtue of it, the nature of the parenting support given to, and controls exercised upon, the target firm.

Goold et al. (1994) suggest that there are four types of Corporate Parenting Strategies that a modern business venture could follow. They are: (*a*) stand-alone influence, (*b*) linkage influence, (*c*) central functions and services, and (*d*) corporate development. These are shown in Exhibit 2.2.

Stand-Alone Influence

Here, the corporate office will be involved in agreeing and monitoring the performance of business units, approving major capital expenditure, and in selection and replacement of the heads of business units. Some may exercise greater influence in product-market strategies, pricing decisions, overall HRD policies and the like. While this kind of control should ideally offer the management expertise and dispassionate control, the corporate parenting should not result in pressing for wrong targets, starving businesses of resources for worthwhile projects, appointing

EXHIBIT 2.2
Parenting strategies

I. Stand-alone influence

II. Linkage influence

III. Central functions and services

IV. Corporate development
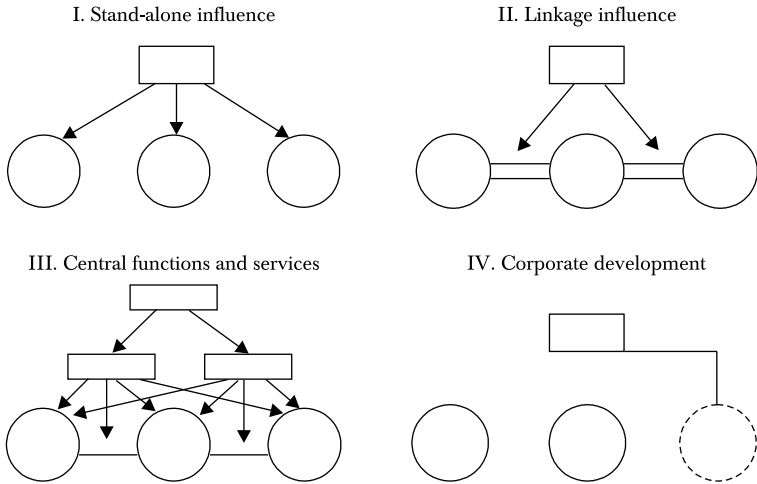
inappropriate managers and so on. A text-book example of a successful stand-alone corporate strategy would be that of General Electric, as fashioned by Jack Welch. Each of the businesses under the GE umbrella is a separate entity, or a 'Strategic Business Unit', with its own autonomy and performance targets.

Linkage Influence

Through linkages such as transfer pricing mechanisms, personal pressure, lateral appointments and the like, relationships are fostered or mandated between businesses that would not occur if the businesses were to be stand-alone independent entities. Structural mechanisms and mandates link the businesses to generate synergy. This kind of inter-linkage has proved effective in sectors such as banking and retailing. In the case of the banking sector in the US, for example, various regional banks have consolidated in the recent years. Synergy is realized by standardization and centralization of back-office processing, sharing of information on banking instruments and such others. Similarly, in the retailing sector in the US, synergy has been realized in common sourcing and savings in costs due to improved logistics.

Central Functions and Services

Under this arrangement, the parent provides cost-effective functional (or services) leadership and support to different product-market entities (business units). The functional structure that commonly existed decades ago in many organizations resembled this form of corporate parenting. In more contemporary organizations, such centralized support is provided with respect to other functions such as Research and Development (R&D) or specialized Project Management services.

A typical example would be that of 3M. Through a central laboratory, the results of high-quality innovation management are made available to a large number of business units, which in turn transform them into marketable products and services. The downstream business units are all independently responsible to the corporate office. While the corporate office monitors the individual businesses, the latter also evaluate the corporate office through, for example, a lab audit process that involves evaluation of the centralized laboratories.

In project-intensive companies such as Bechtel Corporation, specialized project management services are made available to various sites, which are independently managed, costed and billed.

Corporate Development

Under corporate development, the corporate parent buys and sells (or juggles) businesses as if they are liquid properties. It may, by design, hold businesses for a short duration of time, as short as 1–2 years. This strategy involves timely selling of businesses to buyers for whom the properties are worth more (than to the 'portfolio manager'). High focus on the types of businesses that the company would deal in, astute deal-making skills, quick responses, hard-nosed short-term cash generation, break-up of assets to fully realize the true asset values and so on characterize this strategy. Goold et al. cite the example of Hansen as a typical example of a company that falls within such a framework.

Entering Foreign Markets

When a company is extending its operations to other countries, the decision on where to locate the plant (either a green-field project or an

acquisition) is not always carefully made, partly because of lack of information regarding all the candidate countries, or time or potential cost or lack of an analytical framework. Assume that a company has 10 products and is intending to reach out to foreign countries. Since there are more than 100 countries in the world, the decision-maker has to deal with at least 1,000 deals, assuming that one company is evaluated in any given country. To add to the complexity, one can combine products and countries in numerous ways. Since the costs associated with gathering and analyzing data are not trivial, there is a need for a framework to simplify the analysis. Four country-related variables are useful in the analysis—size of the market, investment climate, availability of technology and distance from producers (and other markets).

One of the obvious parameters is the size of the market, needed to support a profitable operation. Because of difficulties in estimating the market size and the growth rates, often investment decisions are made on the basis of guesswork. Further, proxies for market size, like GNP or per capita income, do not tell us anything about the size of the market for the product in question because of differences in life styles, tastes and so on. The FMCG companies typically go to developing countries with the expectation that a soft drink, for example, that is acceptable in the US, would be acceptable to consumers in other parts of the world as well. What these companies do not take into account is the differences in lifestyles between countries. While there are many success stories, there are also spectacular failures. The second parameter is the investment climate. To compare the investment climate in different countries, one may construct a rating scale with the factors shown in Exhibit 2.3.[9] Further, a company should also establish a methodology to assign points within each category. Exhibit 2.4 presents the range of points in the category 'Capital repatriation allowed'.

Exhibit 2.5 presents the investment climate in India. The Economist Intelligence Unit publishes useful country reports, which could be used in gathering intelligence. In case of takeovers in foreign countries, it is necessary to understand the local takeover regulations.[10]

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[9]See Stobaugh (1969).

[10]The chapter on Cross-Border Acquisitions deals with these issues in greater detail.

EXHIBIT 2.3	
Rating scale for determining a country's investment climate	
Item	*No. of Points*
Capital repatriation allowed	0–12
Foreign ownership allowed	0–12
Discrimination and controls	0–12
Stability of prices	0–14
Political stability	0–12
Availability of local capital	0–10
Stability of currency	0–20

EXHIBIT 2.4	
Range of points in the category 'capital repatriation allowed'	
Item	*No. of Points*
No restrictions	12
Restrictions based only on time	8
Restrictions on capital	6
Heavy restrictions	2
No repatriation possible	0

EXHIBIT 2.5	
Investment climate in India	
	India
Openness to foreign investment	Post 1991, as part of the liberalization programme government promoted foreign investment
	Tax incentives for investment
	Allows repatriation of investments
Political risk	Reasonable stability in the government
	Long standing problems of corruption
Infrastructure risks	Insufficient, unreliable power supply
Economic risk	High fiscal deficit
	Currency depreciates frequently against major currencies
Expropriation risk	Risk is low except for 1 or 2 stray incidents

Often, multinational companies get into a strategic alliance with a host-country company and expand later on by buying out the partner. A strategic alliance involves explicit long-term agreement between two or more firms, to exchange goods or services and information. Strategic alliances make sense when the internal resources of either firm are insufficient or deemed risky to invest.

Concluding Comments

In this chapter, we outlined the characteristics of takeover targets, a systematic way to search for potential targets and some generic strategies available to enable lost companies find their way. Companies often merge in the fear that the bigger competitors have economies of scale and may destroy them by exercising a stranglehold on raw material supply, distribution and such others. What they do not realize is the drawbacks of being big.[11] The acquiring company's executives would have drawn up elaborate plans for the target without consulting its executives, which leads to resentment and managerial attrition. This can be avoided by honest discussions with the target company's executives. Most companies merge in the hope that the benefits of synergy will be realized. Synergy will be realized only if the merged entity is managed better after the acquisition than it was managed before. It is the quality of the top management that determines the success of the merger. Quite often, the executives of the acquiring company lose interest in the target company due to its smallness.[12] The small-company executives get bogged down preparing vision-and-mission statements, budgets, forecasts and profit plans, which were hitherto unheard of.

The elaborateness of the control system depends on the size and culture of the company. Once a company is acquired, the acquirer should decide whether the target should be 'left alone' or adhere to the acquiring company's culture and control system. This is not an easy question to answer. If the target is a broken company, the answer is yes. If the target is a successful company and the acquisition motive is to get a foothold in other markets or some such thing, one should exercise one's judgement in changing existing systems, because the exercise may destroy the unique culture and systems that contributed to the success of the company.

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[11]Levinson (1970).
[12]Kitching (1967).

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Exercise: A Mini-Case: Financial Performance of Pharmaceutical Companies in India

Pharmaceuticals are chemicals (bulk drugs) that are converted into formulations. Bulk drugs are derived from plant derivatives, animal derivatives, synthetic chemicals and biogenetic derivatives. Pharmacists disburse certain formulations only upon medical prescription (the so-called ethical drugs), whereas others are obtained over-the-counter.

The pharmaceutical industry is segmented into two types of firms—those that carry out basic research to manufacture products which are patent-protected and those that manufacture generic drugs. Manufacturers of generic drugs manufacture and market pharmaceutical products that are not subject to patent protection. Manufacturers of generic drugs may also manufacture patented products when the patent expires. Generic drugs are less expensive than the patented products because these companies would not have spent money on R&D, all else being equal.

In 1995, India became a signatory to the Uruguay Round Agreement on Trade-Related Intellectual Property Rights that requires the signatories to enforce product patents. It came into effect in 2005.[13] Historically, drug prices in India have been controlled by the central government. The Drug Price Control Order (DPCO), established in 1985, enables the government to control drug prices for 143 basic drugs. The number of drugs covered under DPCO has been brought down from 90 per cent to 50 per cent and is likely to be reduced further. The aim of the DPCO was to ensure that certain drugs were available at affordable prices to all. The obvious disadvantage of the system is that it does not provide adequate incentives to manufacturers to invest in research and development to produce new molecules, because the prices of the end-products are low. Indeed, the prices of many drugs in India are among the lowest in the world.

The Indian pharmaceutical market was estimated at US$ 3 billion in 1997 in terms of the volume consumed. The composition of the global pharmaceutical market is given in Exhibit 1. From the exhibit, it can be seen that the US market is the fastest growing. The Indian market itself was growing at 15 per cent p.a. in terms of sales revenue in 1999. The relaxing of the DPCO, economic liberalization and increases in healthcare spending is likely to have a favourable impact on the pharmaceutical industry. The domestic formulation market has the following segments:

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[13]The Indian Patents Act recognizes only process patents. Parts of the pharmaceutical industry background are from India Infoline.

A longer version of this case appeared in Vishwanath S.R. 2007.

Corporate Finance: Text and Cases (2nd edition), New Delhi: Sage Publications

- Analgesics that relieve pain
- Antacids
- Antibiotics
- Anti-tuberculosis products
- Anti-parasitic and anti-fungal products
- Cardiovascular drugs
- Corticosteroids that cure skin problems, asthma and so on.
- Anti-rheumatic products that relieve joint pain
- Vitamins
- Others

EXHIBIT 1 Global pharmaceutical market			
Country	Sales (1999) (US$ billion)	Per cent share	Per cent growth
US	81.8	41.3	11
Europe	46.5	23.5	7
Japan	31.5	15.9	−1
Latin America	12.9	6.5	2
South East Asia and China	13.5	6.8	8
Source: India Infoline.			

The Indian pharmaceutical industry, like its global counterpart, is highly fragmented with no company holding a substantial market share. Ranbaxy, Cipla, Glaxo, Dr Reddy's Lab and Sun Pharma are some of the dominant pharmaceutical companies in India. A few years back, Glaxo India held a 7 per cent market share followed by Ranbaxy (5 per cent) and Cipla (4 per cent). Currently, Ranbaxy is the market leader. It has strengths in many therapeutic segments and has operations in 40 countries with international sales accounting for 50 per cent of total sales. Ranbaxy is currently the 11th largest generics company in the world. Glaxo is a subsidiary of Glaxo-Wellcome of United Kingdom (UK). It has about 20 brands. Glaxo merged with SmithKline Beecham worldwide to create a dominant pharmaceutical company in the world. Dr Reddy's Laboratories is another dominant company. Sun Pharma is ranked 8th in the domestic formulations market. It has a major presence in certain segments like cardiac care, psychiatry and so on.

Company Backgrounds

In 1935, Khwaja Abdul Hameid, a doctorate in chemistry from Berlin University, set up The Chemical, Industrial & Pharmaceutical Laboratories, which came to be popularly known as Cipla. On 17 August 1935, Cipla was registered as a Public Limited Company. In 1944, the company bought the premises at Bombay Central and decided to put up a first-class modern pharmaceutical works and laboratory. Cipla has been awarded the Chemexil Award in 1978–79 and 1981–82, the National Award for successful commercialization of publicly-funded R&D. More details of the company are available on its website (www.cipla.com).

India's largest pharmaceutical company, Ranbaxy Laboratories Limited, is a research-based international pharmaceutical company. It has been rated the 11th largest generic company worldwide. The company exports its products to over 70 countries, with ground operations in 25 and manufacturing facilities in seven countries. Ranbaxy has emerged as a leading pharmaceutical company in India, with the third largest share of the domestic market. Ranbaxy has a joint venture agreement with Eli Lilly & Co. of USA, to market select Eli Lilly products. The company's GDR is listed in Luxembourg Stock Exchange. It entered the US market in 1998 to market its products. In 1997, the company's sales crossed the Rs 10 billion mark. More details of the company are available on its website (www.ranbaxy.com).

Glaxo India is a 51 per cent subsidiary of Glaxo-Wellcome of UK Glaxo India is the No. 1 pharma company in terms of market share. It has a market share of 4.2 per cent in the prescription drugs and an overall market share of 7.2 per cent. It was incorporated in 1924 as H.J. Foster & Co., which later became a wholly owned subsidiary of Joseph Nathan & Co. in 1926. Initially, Glaxo was established to sell processed baby foods. It sold off the baby foods business to Heinz in 1994. Pharmaceuticals remain the main business of Glaxo India. Boroughs Wellcome acquired the parent company of Glaxo India in 1995. Glaxo merged with SmithKline Beecham Pharmaceuticals in 2001. The major chunk of revenues comes from formulations that constitute around 85 per cent of the total sales, with the rest coming from bulk drugs. More details about the company are available on its website (www.glaxowellcome.co.in).

Sun Pharmaceutical Industries manufactures and markets specialty medicines and active pharmaceutical ingredients for chronic therapy areas,

such as cardiology, psychiatry, neurology and gastroenterology. Sun Pharma began in 1983 with just five products to treat psychiatry ailments. Sales were initially limited to West Bengal and Bihar and later on expanded nation-wide in 1985. In 2001, an ORG Retail Chemist Audit ranked Sun Pharma among the top five pharma companies in India. The company established a research centre in 1993 and a bulk drugs plant in 1994. Sun Pharma has used a combination of organic growth and acquisitions to drive growth; prominent among the several mergers that it completed were those of the USFDA-approved Caraco Pharm Labs and the UKMCA-approved M J Pharma. More details of the company are available on its website (www.sunpharma.com).

Dr Reddy's Lab (DRL) was incorporated in February 1984 by promoters Dr Anji Reddy and Mr M.P. Chary.[14] Since inception, DRL has pioneered reverse engineering of many popular under-patent drugs, broad-basing its therapeutic presence. Production of bulk drug Methyldopa (for cardiac patients) commenced at its Hyderabad plant in July 1985. Within a year, DRL became the first Indian company to export the drug to Europe. DRL was converted into a public limited company in 1985 and had an IPO of equity-linked debentures aggregating Rs 24.60 million in May 1986. That year, the company acquired a bulk drug company at Hyderabad (Benzex Labs). This factory was modernized and is now DRL's unit II. In the same year, DRL started manufacturing formulations. FDA approval was received in 1987 and exports to the U.S.A. commenced. In 1993, it purchased facilities of Krishna Alchemy in Hyderabad–upgraded it and made it unit III. In the late 1980s, DRL took up production of quinolone antibiotics and stopped the earlier-lesser profitable drugs. After launching Norfloxacin (its first quinolone drug) in 1988, DRL increased presence in this segment–Ciprofloxacin in 1989, Pefloxacin in 1991 and so on. In FY 1994, 70 per cent of sales were quinolones. Mounting competitions led to steep price decline over 20–25 per cent per annum in quinolones since FY 1994. Also, DPCO 1995 included Ciprofloxacin and Norfloxacin, increasing DRL's coverage from 5 per cent to 50 per cent. But, DRL's over-dependence on quinolones continued in the absence of major new launches till FY 1996. DRL plans to strengthen its position in the domestic formulations market, including

[14]This section is based on an Indiainfoline report.

the OTC segment. In FY 2001, the company merged with Cheminor Drugs to become a broad-based pharmaceutical giant.

In 2001, Dr Reddy's became the first Asian company outside Japan to get itself listed on New York Stock Exchange. More details of the company are available on its website (www.drreddys.com).

Exhibits 2–7 present the financial statements and relevant financial data of these companies.

- Evaluate each company in terms of growth in total assets, long-term debt, stockholders' equity, sales, operating profit, pre-tax income and net income for FY 2001.
- See the common-size balance sheets. Compare FY 2000 with FY 2001. Why do current assets vary across firms? Why does borrowing vary from 1 per cent to 35 per cent across firms?
- See the common-size income statements. Compare FY 2000 with FY 2001. Which firm is the most profitable? Why does net income vary from 4 per cent to 22 per cent across firms?
- See the cash flow statements. Why did cash flow from operations increase from Rs 53.79 crore to Rs 212.09 crore for Glaxo?[15] Did all firms experience an increase in cash flow from operations? If not, why not? Is the cash flow from operations more or less than the cash flow from investing activities for these firms? If yes, why? If not, why not? For DRL, the cash flow from operations in FY 2000 was Rs 86.63 crore, whereas the cash flow from investing was Rs 110.18 crore. Where did DRL get the additional cash to finance the investment? Can this situation continue indefinitely?
- Look at the financial ratios for these firms. Which firm has the most (least) liquidity as of FY 2001? Can a firm have too much liquidity? Which firm is best (worst) at managing its assets as of FY 2001? Which firm is the most (least) financially leveraged as of FY 2001? Do you expect pharmaceutical firms to be highly leveraged? Why? Can a firm have too much or too little debt?
- What were the factors that caused the change in return on equity for each company? Perform a Du Pont Analysis.
- Academic studies suggest that the takeover candidates are often firms with low leverage and poor operating performance. Are any of these firms good takeover candidates? Why?

[15]Rs 10 million = Rs 1 crore.

EXHIBIT 2
Pharmaceutical firms—Balance sheet

Rs Crore

	Glaxo 2001	Glaxo 2000	Ranbaxy 2001	Ranbaxy 2000	Cipla 2001	Cipla 2000	Sun 2001	Sun 2000	DRL 2001	DRL 2000
Assets										
Net fixed assets	125.5	87.05	580.29	644.37	187.18	161.75	158.78	140.9	327.85	189.49
Cash and bank	56.74	16.26	59.38	15.15	5.82	4.27	10.56	4.35	19.44	21.91
Receivables	217.84	182.33	853.79	894.59	352.8	257.15	165.49	171.46	384.39	199.7
Inventory	180.75	171.32	459.67	417.42	275.36	212.19	147.97	72.38	157.61	69.83
Deferred tax	41.33	4.15	27.25	0	0	0	0	0	0	0
Investments	151.69	124.87	343.55	291.07	222.93	194.99	64.45	50.12	79.45	141.27
Intangible/misc	12.61	14.33	198.02	127.31	0.23	0.3	39.42	42.01	97.73	55.7
Total	786.46	600.31	2,521.95	2,389.91	1,044.32	830.65	586.67	481.22	1,066.47	677.9
Liabilities										
Total borrowing	9.71	34.85	125.99	255.83	24.01	19.47	35.71	48.62	383.31	174.65
Sundry creditors	138.47	99.91	338.61	339.26	109.01	79.71	32.14	35.9	95.03	45.01
Other current liabilities	13.24	14.99	85.16	66.44	57.81	26.92	27.71	25.13	11.06	11.19
Provisions	51.26	56.1	209.43	145.73	128.83	129.04	25.76	6.85	23.8	11.89
Deferred tax	13.21	0	160.57	0	0	0	0	0	0	0
Share capital	74.48	59.78	115.89	115.89	59.97	59.97	79.49	64.98	31.65	26.49
Reserves and surplus	486.09	334.68	1,486.3	1,466.76	664.69	515.54	385.86	299.74	521.62	408.67
Total	786.46	600.31	2,521.95	2,389.91	1,044.32	830.65	586.67	481.22	1,066.47	677.9

EXHIBIT 3

Pharmaceutical firms — Income statement

Rs Crore

	Glaxo		Rambaxy		Cipla		Sun		DRL	
	2001	*2000*	*2001*	*2000*	*2001*	*2000*	*2001*	*2000*	*2001*	*2000*
Income										
Sales	1,121.09	955.74	2,362.47	1,983.89	1,400.81	772.14	612.85	479.04	991.24	493.02
Other income	35.74	20.08	25.79	85.47	19.85	17.61	14.41	11.8	8.93	4.87
Change in stocks	−10.06	31.88	28.58	20.06	85.09	34.32	44.82	3.26	28.49	−0.25
Non-recurring income	91.34	20	87.52	3.03	8.2	1.63	1.4	1.79	1.43	0.46
Expenditure										
Raw materials, etc.	526.21	497.12	1,269.93	1,120.59	707.57	390.43	289.1	214	349.31	165.33
Indirect taxes	95.04	89.09	94.51	104.89	115.85	67.42	71.24	48.46	74.02	57.01
Excise duty	87.06	83.98	88.72	99.81	111.33	67.24	52.94	36.46	71.35	55.12
Repairs and maintenance	11.8	11.7	14.59	12.49	29.69	14.79	74	5.31	30.06	14.94
Selling and dist.	88.74	66.18	343.34	227.41	119.51	51.59	46.64	40.45	106.22	71.63
Non-recurring exp.	111.62	0	129.85	4.94	27.67	0	0.15	0	2.35	0.65
EBDIT	130.88	131.62	258.15	306.35	255.85	188.74	168.39	114.47	261.45	96.24
Less: Dep	25.66	16.41	49.16	50.17	15.63	13.34	16.11	13.76	42.52	13.07
Less: Int.	10.49	12.15	47.47	63.47	2.65	2.74	7.65	10.41	43.38	16.35
PBT	94.73	103.06	161.52	192.71	237.57	172.66	144.63	90.3	175.55	66.82
Less: Tax	45.59	32.52	25.81	12.1	58.5	39.6	9.45	6.64	31.08	6.5
PAT	49.14	70.54	135.71	180.61	179.07	133.06	135.18	83.66	144.47	60.32

EXHIBIT 4
Pharmaceutical firms—Common-size balance sheet

Per cent of total assets

	Glaxo		Ranbaxy		Cipla		Sun		DRL	
	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000
Assets										
Net fixed assets	15.95758	14.50084	23.00958	26.9621	17.92362	19.4727	27.06462	29.27975	30.74161	27.9525
Cash and bank	7.214607	2.708601	2.354527	0.633915	0.5573	0.514055	1.79999	0.903952	1.822836	3.23204
Receivables	27.6988	30.37264	33.85436	37.43195	33.78275	30.95768	28.20836	35.63027	36.04321	29.45862
Inventory	22.98273	28.53859	18.22677	17.46593	26.3674	25.54506	25.22202	15.04094	14.77866	10.30093
Deferred tax	5.255194	0.691309	1.080513	0	0	0	0	0	0	0
Investments	19.28769	20.80092	13.6224	12.17912	21.34691	23.47439	10.98573	10.41519	7.449811	20.83936
Intangible/misc	1.603387	2.3871	7.851861	5.326979	0.022024	0.036116	6.71928	8.729895	9.163877	8.216551
Total	100	100	100	100	100	100	100	100	100	100
Liabilities										
Total borrowing	1.234646	5.805334	4.995737	10.70459	2.299104	2.343948	6.086697	10.10349	35.94194	25.76339
Sundry creditors	17.60674	16.64307	13.42652	14.19551	10.43837	9.596099	5.478378	7.460205	8.910705	6.639622
Other current liabilities	1.683493	2.497043	3.376752	2.780021	5.53566	3.240835	4.723269	5.222144	1.037066	1.650686
Provisions	6.517814	9.345172	8.304288	6.097719	12.33626	15.53482	4.390884	1.423465	2.231661	1.753946
Deferred tax	1.679679	0	6.366899	0	0	0	0	0	0	0
Share capital	9.470285	9.958188	4.595254	4.849137	5.742493	7.219647	13.54935	13.50318	2.967735	3.907656
Reserves and surplus	61.80734	55.7512	58.93455	61.37302	63.64812	62.06465	65.77122	62.28752	48.91089	60.2847
Total	100	100	100	100	100	100	100	100	100	100

EXHIBIT 5
Pharmaceutical firms—Common-size income statement

Per cent of sales

	Glaxo		Rambaxy		Cipla		Sun		DRL	
	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000
Income										
Sales	100	100	100	100	100	100	100	100	100	100
Other income	3.187969	2.1009898	1.091654	4.308203	1.417037	2.280674	2.351309	2.46326	0.900892	0.98779
Change in stocks	−0.89734	3.3356352	1.209751	1.011145	6.074343	4.44479	7.313372	0.680528	2.874178	−0.05071
Non-recurring income	8.147428	2.0926193	3.704597	0.15273	0.585376	0.211102	0.228441	0.373664	0.144264	0.093303
Expenditure										
Raw materials, etc.	46.93736	52.014146	53.75433	56.48448	50.51149	50.56466	47.17304	44.67268	35.2397	33.53414
Indirect taxes	8.477464	9.3215728	4.000474	5.287087	8.270215	8.731577	11.62438	10.11607	7.467415	11.56343
Excise duty	7.765657	8.7869086	3.755392	5.031025	7.947545	8.708265	8.638329	7.611055	7.198055	11.18007
Repairs and maintenance	1.052547	1.2241823	0.617574	0.629571	2.119488	1.915456	1.207473	1.108467	3.032565	3.030303
Selling and dist.	7.915511	6.9244774	14.53309	11.46283	8.531492	6.681431	7.610345	8.443971	10.71587	14.52882
Non-recurring exp.	9.956382	0	5.496366	0.249006	1.975286	0	0.024476	0	0.237077	0.13184
EBDIT	11.67435	13.771528	10.92712	15.44188	18.26443	24.44375	27.47654	23.89571	26.37605	19.52051
Less: Dep	2.288844	1.7169942	2.080873	2.52887	1.115783	1.727666	2.628702	2.872411	4.289577	2.651008
Less: Int.	0.935697	1.2712662	2.009338	3.19927	0.189176	0.354858	1.248266	2.173096	4.376337	3.316295
PBT	8.449812	10.783267	6.836912	9.713744	16.95947	22.36123	23.59958	18.8502	17.71014	13.5532
Less: Tax	4.066578	3.402599	1.092501	0.609913	4.176155	5.128604	1.541976	1.386106	3.135467	1.318405
PAT	4.383234	7.3806684	5.744412	9.103831	12.78332	17.23263	22.0576	17.46409	14.57467	12.2348

EXHIBIT 6
Pharmaceutical firms — Statement of cash flows

Rs Crore

Cash Flow Statement	Glaxo Dec-'00 12 months	Glaxo Dec-'01 12 months	Ranbaxy Dec-'00 12 months	Ranbaxy Dec-'01 12 months	Cipla Mar-'00 12 months	Cipla Mar-'01 12 months	Sun Mar-'00 12 months	Sun Mar-'01 12 months	DRL Mar-'00 12 months	DRL Mar-'01 12 months
Sources of cash										
Opening balance	19.75	45.82	48.81	84.31	3.54	4.27	8.5	4.35	18.88	29.54
Revenue inflow	108.64	146.95	247.65	345.25	169.94	234.99	115	158.91	91.91	245.41
Non-operating income	31.02	−86.22	38.06	1.7	14.83	13.3	−2	38.24	−3.95	2.43
Sale of fixed assets	1.14	40.98	3.23	0.53	3.29	2.75	1.97	1.16	0.17	7.09
Sale of investments	−3.99	−5.64	0.51	80.08	140.03	218.31	5.95	8.7	0	0
Capital proceeds	0	0	0	0	0	0	−0.61	0	0	0
Loan proceeds	14.15	0	0	0	0	4.48	0.84	0.66	63.7	20.81
Decrease in working capital	9.79	65.14	176.51	0	45.46	60.49	23.92	0	4.76	1.46
Trade receivables	0	32.96	0	0	0	60.49	23.92	0	0.62	0
Inventories	0	26.69	0	0	0	0	0	0	4.14	0
Trade payables	9.79	5.49	176.51	0	45.46	0	0	0	0	1.46
Total cash inflow	180.5	207.03	514.77	511.87	377.09	538.59	153.57	212.02	175.47	306.74
Application of cash										
Purchase of fixed assets	13.61	26.56	59.41	15.04	33.44	42.84	37.33	32.55	24.95	48.6
Purchase of investments	0	0	8.32	60	193.25	242.2	0	5.72	80.76	24.01
Repayment of loans	0	25.13	61.16	129.85	14.04	0	19.27	8.71	0	40.88
Loans to group companies	0	0	0	0	0	0	0	0	0	−8.27
Loans to other companies	0	0	0	0	−17.8	0.42	0	0	0	0

Interest paid	11.52	10.44	63.01	48.93	1.14	0.83	10.41	7.66	14.07	41.84
Tax paid	35.16	42.61	24.12	21.27	56.73	66.01	5.36	10.25	10.28	27.23
Dividend paid	39.41	45.59	86.26	86.47	16.64	19.75	29.82	11.89	8.82	13.83
Other cash expense	0	0	0	0	0	-0.15	-0.15	16.35	4.64	0
Increase in working capital	64.64	0	128.18	93.09	75.38	160.73	47.18	108.33	10.04	99.19
Trade receivables	26.57	0	73.39	41.66	21.61	0	0	26.7	0	69.74
Inventories	38.07	0	54.79	42.25	53.77	63.16	22.27	75.59	0	29.45
Trade payables	0	0	0	9.18	0	97.57	24.91	6.04	10.04	0
Closing balance	16.16	56.7	84.31	5722	4.27	5.81	4.35	10.56	21.91	19.43
Total cash outflow	180.5	207.03	514.77	511.87	377.09	538.59	153.57	212.02	175.47	306.74
Increase/decrease in cash balance	-3.59	10.88	35.5	-27.09	0.73	1.54	-4.15	6.21	3.03	-10.11
Cash flow before working capital charges	108.64	146.95	247.65	345.25	169.94	234.99	115	158.91	91.91	245.41
Cash flow from operations	53.79	212.09	295.98	252.16	140.02	134.75	91.74	50.58	86.63	147.68
Cash used in investing activity	16.46	-8.78	63.99	-5.57	65.57	64.4	29.26	44.76	110.18	57.25
Cash from financing activity	14.15	-25.13	-61.16	-129.85	-14.04	4.48	-19.04	-8.05	63.7	-20.07
Net increase in working capital	54.85	-65.14	-48.33	93.09	29.92	100.24	23.26	108.33	5.28	97.73

EXHIBIT 7
Select financial ratios and data

	Glaxo		Ranbaxy		Cipla		Sun		DRL	
	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000
Inventory management										
Raw material turnover	5.85	6.46	4.44	4.97	3.68	3.68	5.68	5.82	11.26	7.24
Finished goods turnover	8.81	9.38	11.36	11	5.86	5.33	8.44	11.84	14.96	10.2
Debtors turnover	9.57	8.52	4.66	3.99	9.24	11.02	6.8	6.25	4.8	3.65
Creditors turnover	6.64	7.02	5.46	5.76	7.45	8.27	10.62	8.12	8.36	5.76
Holding period (days)										
Raw material	65	57	83	75	96	95	65	65	46	66
Debtors	38	43	78	91	40	33	54	58	76	100
Creditors	55	52	67	63	49	44	34	45	44	63
Net working capital cycle (days)	112	108	142	153	169	177	151	123	127	163
Asset turnover										
Net sales/Total assets	1.3	1.44	0.89	0.78	0.93	0.84	0.92	0.89	0.86	0.64
Net sales/Net fixed assets	8.17	9.95	3.9	2.91	5.24	4.35	3.4	3.05	2.79	2.3
Liquidity										
Current ratio	2.02	2	1.87	1.74	2.02	1.9	2.73	1.74	1.44	1.28
Quick ratio	0.78	0.68	0.72	0.49	0.47	0.31	0.77	0.65	0.71	0.6
Operating cash flow to total assets per cent	30.6	9.44	11.12	13.73	16.97	22.58	9.51	19.88	18.61	15.18
Leverage										
Debt to equity	0.02	0.09	0.09	0.18	0.03	0.03	0.08	0.13	0.84	0.46

Interest coverage(EBIT/Int)	11.96	7.84	5.29	4.07	90.65	64.01	19.74	9.5	5.07	5.1
EBDIT/Int	14.14	9.19	6.33	4.86	94.23	68.29	21.85	10.82	6.05	5.9
Total debt/Total assets per cent	1.24	5.81	5.43	11.54	2.66	2.84	6.11	10.14	39.44	28.41
Margin ratios										
EBDIT/Net sales per cent	14.73	12.88	13.25	16.41	25.45	26.55	30.86	26.17	28.6	22.12
EBIT/Net sales per cent	12.23	10.99	11.08	13.74	23.86	24.66	27.89	22.97	23.97	19.12
PAT/Net sales per cent	6.77	5.83	7.85	9.71	17.63	18.65	24.73	19.01	15.85	13.88
Profitability										
EBDIT/Total assets per cent	21.81	19.59	13.25	14.3	31.44	30.17	31.42	24.42	33.07	16.9
EBIT/Total assets per cent	18.11	16.71	11.08	11.98	29.48	28.02	28.39	21.44	27.71	14.61
PAT/Net worth	14.54	13.39	7.85	8.47	27.06	25.89	32.27	24.29	34.62	16.76
Growth per cent										
(Net) Sales growth per cent	18.3	6	23.55	6.92	39.2	18	13.67	32.6	110.3	15
Total assets	30.93	11.36	4.63	5.81	31.64	23.57	21.82	8.23	58.09	16.77
Debt (long-term)	-45	4.9	-45	196	-7	N.A.	-75.8	N.A.	317	N.A.
Equity (net worth)	42	9.4	-1	3.3	26	N.A.	27	N.A.	20.3	N.A.
PBT	38	0	4.7	7	3.5	N.A.	61	N.A.	163	N.A.
PAT	37	-8	-2	-6.8	31.5	N.A.	63	N.A.	140	N.A.
Miscellaneous										
Current assets/Total assets	0.52	0.63	0.59	0.59	0.7	0.69	0.55	0.38	0.56	0.44
No. of shares	74,475,000	59,775,000	115,895,478	115,895,478	115,895,478	5,997,2343	46,774,537	46,756,018	76,515,948	31,588,780
Dividend rate per cent	55	50	100	75	45	0	50	0	40	5
Price Rs	287.7	672.2			1,043		538		1,272	5

3
Value Drivers and Target Valuation

VISHWANATH S.R. AND CHANDRASHEKAR KRISHNAMURTI

CHAPTER OBJECTIVES
- Provides a link between growth and shareholder value
- Highlights the role of three value drivers in value creation
- Introduction to alternate valuation frameworks like free cash flow to firm, adjusted present value, capital cash flow valuation and relative valuation
- Provides a framework for estimating the value of synergy in acquisitions

In recent years, worldwide, the M&A volume has been averaging US$ 2 trillion, as discussed earlier. The last few decades have witnessed major waves of acquisitions. Increased regulations and increased uncertainty about the economy coupled with the belief that undervalued companies with strong fundamentals are available for purchase make internal growth relatively unattractive because of which acquisitions are increasingly becoming an important aspect of growth strategy. Companies acquire for a variety of reasons like gaining synergy, acquiring undervalued assets, increasing sales and asset growth, increasing market share and adding new products. Despite the good intentions, few acquisitions actually create value. A number of academic studies around the world have documented

neutral or negative announcement day returns to the bidding company's shareholders. Despite such statistics, more and more companies are resorting to growth via acquisitions. It is important to understand that only a limited supply of acquisition candidates is available at an attractive price. A well-designed financial evaluation programme is necessary to avoid costly mistakes. The purpose of this chapter is to provide a rigorous understanding of the determinants of equity value.

Value-based management assumes that value creation should be the key consideration in managerial decision-making. To make intelligent acquisitions, acquirers need to know what creates value and why, as well as translate that knowledge to measure the value-creation potential of an acquisition.

Value is created when the NPV of a strategy is positive at the time of implementation.

Value created by strategy = PV of incremental cash flows due to new investment – PV of investment in fixed assets and working capital + PV of residual value.

Value Drivers

Modern capital budgeting suggests that NPV is a function of valuation parameters or value drivers like sales growth rate, operating profit margin, tax rate, fixed capital investment, working capital investment, cost of capital and the duration of the project. These value drivers are affected by operating decisions, such as product mix, promotion, advertising, distribution, customer service, investment in inventory, capacity expansion and so on. Value is enhanced if the same returns are achieved for a lower level of investment or higher returns are achieved for the same level of investment. The value of the strategy can be enhanced by:

- Acceleration of cash flows (leading to higher NPV).
- Increase in the level of cash flows.
- A reduction in the risk associated with cash flows (volatility) and hence, indirectly, the firm's cost of capital.
- Increasing the residual value of the business.

Total shareholder value is the sum of NPVs of all projects undertaken by the firm. Thus, whenever a firm acquires another firm for a price

greater than the PV of the expected cash flows, the value of the firm drops (and vice versa). Consider two companies. The first company has an investment opportunity with 25 per cent ROE in amounts sufficient to produce a 10 per cent sustainable growth rate[1] in sales for 10 years. The second company has an investment opportunity with 10 per cent ROE in amounts sufficient to produce a 10 per cent sustainable growth rate in sales for 10 years. Both the companies have 20 per cent cost of equity. The market values of the two hypothetical companies are shown in Exhibits 3.1 and 3.2.

EXHIBIT 3.1							
Market price of Company A							
Beginning of year of inv.	BV	ROE	PAT	RR*	Retained earnings	Div.	PV@20 per cent
1	1,000	25 per cent	250	40 per cent	100	150	125
2	1,100		275		110	165	114.6
3	1,210		302.5		121	181.5	105
4	1,331.0		332.8		133.1	199.7	96.3
5	1,464.1		363		146.4	219.6	88.3
6	1,610.5		402.6		161.1	241.5	80.9
7	1,771.6		442.9		177.2	265.7	74.2
8	1,948.7		487.2		194.9	292.3	68.0
9	2,143.6		535.90		214.4	321.3	62.3
10	2,357.9		589.5		235.8	353.7	57.1
11	2,593.7					2,593.7	418.8
Total							**1,290.5**
*RR = Retention rate							

At the end of 10 years, the stock is expected to sell at the book value of Rs 2,593.70. In other words, ROE = cost of equity.

The second company retains all the profits it generates (that is, retention rate is 100 per cent) to produce a growth of 10 per cent p.a. The theoretical market price for the second company is shown in Exhibit 3.2.

[1]Sustainable growth rate = Retention rate * [PAT/Sales] * [Sales/Assets] * [Assets/Equity] = ROE*Retention. This analysis is based on a series of articles by William Fruhan in the Harvard Business Review. See Fruhan, W.E. Jr. 1984. 'How Fast Should Your Company Grow?' *Harvard Business Review*, January–February, 62(1): 84–93. Fruhan, W.E. Jr. and R.P. Thomas. 1981. 'Is Your Stock Worth Its Market Price?' *Harvard Business Review*, May–June: 125–32.

| EXHIBIT 3.2 |
| Market price of Company B |

Beginning of year of inv.	BV	ROE	PAT	RR	Retained earnings	Div.	PV@20 per cent
1	1,000	10 per cent	100	100 per cent	100	0	0
2	1,100		110		110	0	0
3	1,210		121		121	0	0
4	1,331.0		133.1		133.1	0	0
5	1,464.1		146.4		146.4	0	0
6	1,610.5		161.1		161.1	0	0
7	1,771.6		177.2		177.2	0	0
8	1,948.7		194.9		194.9	0	0
9	2,143.6		214.4		214.4	0	0
10	2,357.9		235.8		235.8	0	0
11	2,593.7					2,593.7*	418.8

*Market price at the end = Book value

- Market price/Book value = 1,290.5/1,000 = 1.29 for Company A
- Market price/Book value = 418.8/1,000 = 0.42 for Company B

The PV of cash returned to stockholders, Rs 1,290.5, is Rs 290.5 more than the initial investment of Rs 1,000 for shareholders in Company A. So the M/B ratio of Company A is greater than one. The PV of cash returned to stockholders Rs 418.9 is lower than the initial investment of Rs 1,000 for shareholders in Company B. So the M/B ratio of Company B is less than one. The moral of the story is that how fast a company *can* grow and how fast a company *should* grow are two different things. Growth is desirable if expected ROE is greater than cost of equity and if the spread can be maintained. If not, growth will destroy value. The value-creation model shown in Exhibit 3.3 depicts the concept.

The value-creation model just presented has three components: profitability, advantage horizon and reinvestment.

Profitability. In any industry group, more profitable firms–those able to generate higher earnings per rupee of earnings–should have higher M/B ratios. Conversely, firms that are unable to generate positive abnormal returns should sell for lower M/B ratios.

$$ROE > K_e, M/B > 1$$
$$ROE < K_e, M/B < 1$$
$$ROE = K_e, M/B = 1$$

EXHIBIT 3.3
Value creation model
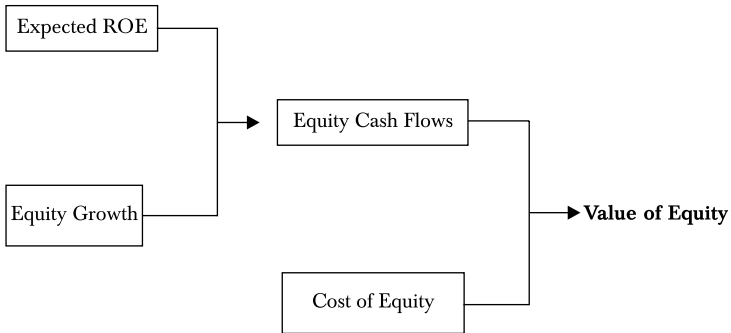
ROE is a function of profit margin, asset turnover and leverage.
ROE = PAT/Equity = [PAT/Sales] * [Sales/Assets] * [Assets/Equity]

Increasing any of the components (profit margin, asset turnover or leverage) increases ROE. Increasing prices or reducing costs, for example, may increase profit margin. Similarly, decreasing the asset base for the same level of revenues increases asset turnover (say, by reducing inventory or book debt).

If the model were right, we would expect a positive relation between M/B ratios and ROE, keeping cost of equity constant. One of the earliest tests of the model was by Fruhan (1979). He found that higher M/B ratios are indeed associated with high ROEs in a wide range of industries.[2]

Advantage horizon. The period for which a firm can maintain a positive (ROE–Ke) spread is called advantage horizon. The greater the abnormal returns, the longer the advantage horizon; the sooner the abnormal returns, the higher the M/B ratio.[3] Over time, competitive pressures drive returns to the cost of capital. Although a company's competitive advantage

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[2]Since companies in any industry group would be expected to have similar capital structures and hence costs of capital (a somewhat restrictive assumption), we can test for association between M/B and ROE for companies in the same industry group.

period is affected by a multitude of internal and external factors, only a few key factors like current return on capital, rate of industry change and barriers to entry have a significant bearing. Companies with high (ROIC and hence) P/E multiples tend to have a long competitive advantage period and those with low P/E multiples tend to have a short CAP. Michael Porter's five-forces framework can be useful in gaining insight into the competitive advantage period of a company.[4] The state of competition in an industry depends on five basic forces, as shown in Exhibit 3.4.

EXHIBIT 3.4
Forces governing competition

Threat of
new entrants

Bargaining
power of
suppliers

Jockeying for position
among current
competitors

Bargaining
power of
customers

Threat of
substitute
products or
services
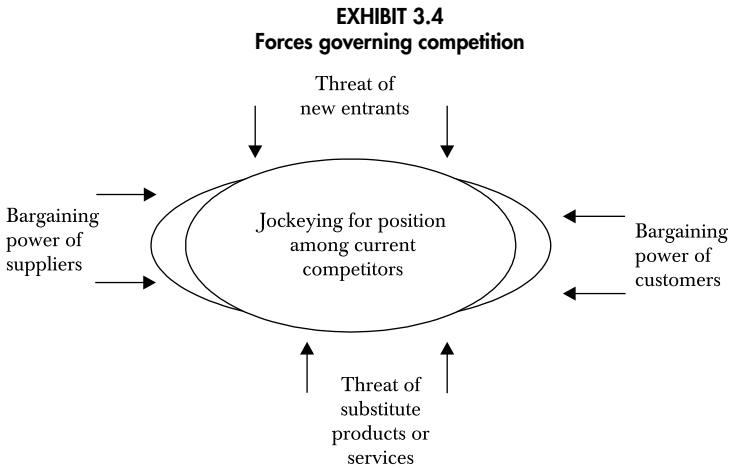
High barriers to entry, for instance, prevent competition from capturing higher returns. Some of the major sources of barriers to entry are: economies of scale, product differentiation, capital requirements and access to distribution channels. Economies of scale force an entrant to

[3]Fruhan, W. F. 1979. *Financial Strategy: Studies in the Creation, Transfer and Destruction of Shareholder Value*, Homewood, IL: Irwin.

Benjamin, C.E. 1997. 'Note on Value Drivers', *HBS Case Study No. 9-297-082*, 7 April.

[4]Michael, E.P. 1979. 'How Competitive Forces Shape Strategy', *Harvard Business Review*, March–April: 137–56.

either enter the industry on a large scale or accept a cost disadvantage. Economies of scale may be present in production, purchase or marketing.

The competitive advantage period (CAP) can range from 0 to 20 or more years, depending on the competitive position of the company. Highly successful companies like Coca Cola and Microsoft have relatively long advantage horizons. It is to be understood that the CAP may not remain constant; it may increase or decrease. Whenever the CAP of a company increases, we would expect the stock values to go up. Further, CAP is finite. In other words, companies that earn abnormal returns may not continue to do so forever. Returns fall to normal levels and the spread between ROE and cost of equity shrinks.

The CAP of some companies in the Food Industry in the US is given here:

Company	In years	
	1982	*1989*
Campbell Soup	4	20
CPC International	10	15
H.J. Heinz	5	13
Hershey Foods	6	20
Kellogg	18	19
Average	8.6	17.4

Source: Mauboussin and Johnson (1997).

Reinvestment. A firm can either retain its earnings or pay out as dividends to shareholders. Intuitively, we would expect the values to increase when firms reinvest in projects (acquisitions) that generate abnormal returns. The example of the two firms in Exhibits 3.1 and 3.2 can be generalized as follows:

The value of equity is the present value of dividends

$$= \frac{[(1-r)*ROE*E_0]}{(1+K_e)} + \frac{[(1-r)*ROE*E_0(1+rROE)]}{(1+K_e)2} + \cdots$$

where r is the retention ratio, E_0 is the value of equity at time = 0, ROE is the return on equity and K_e is the cost of equity.

$$= \frac{[(1-r)*ROE*E_0]}{(1+K_e)}\left\{1 + \frac{(1+rROE)}{(1+K_e)} + \frac{(1+rROE)}{(1+K_e)2} + \cdots\right\}$$

This is a growing perpetuity with growth rate equal to the sustainable growth rate. It can be written as:

$$\text{Equity value (market)} = \frac{(\text{Payout})\ (\text{ROE})\ (E_0)}{(K_e - g)}$$

Dividing both sides by E_0, the book value of equity,

$$M/B = \frac{(\text{Payout})\ (\text{ROE})}{(K_e - g)} = \frac{(1 - r)\ (\text{ROE})}{(K_e - r*\text{ROE})}$$

where use is made of the fact that sustainable growth = retention ratio * ROE

If the retention ratio is zero, that is, if the firm pays all its earnings as dividends,

$$M/B = [\text{ROE}/K_e]$$

Those firms that generate returns in excess of cost of equity will sell at higher M/B ratios.

Economics of a Merger

Since acquisitions are an alternative to internal growth, the framework presented so far can be applied to mergers as well. The task of enterprise valuation is to estimate the magnitude of (present value of) future benefits to shareholders in relation to the purchase price. The first step in merger analysis is to identify the economic gains from the merger. There are gains if the combined entity is more than the sum of its parts.

That is, combined value > (value of acquirer + stand-alone value of target).

The difference between the combined value and the sum of the values of individual companies is usually attributed to synergy.

Value of acquirer + stand-alone value of target + value of synergy = combined value.

There is also a cost attached to an acquisition. The cost of acquisition is the price premium paid over the market value plus other costs of integration. Therefore, the net gain is the value of synergy minus the premium paid.

Suppose,

$$V_A = \text{US\$ } 100$$
$$V_B = \text{US\$ } 50$$
$$V_{AB} = \text{US\$ } 175$$
$$\text{Synergy} = V_{AB} - (V_A + V_B) = 25$$
If premium is US US\$ 10, net gain = US\$ 25 – US\$ 10 = US\$ 15

To illustrate, the sharing of synergy between Daimler and Chrysler is given here:

Market value	Daimler	Chrysler	Combined (US\$ billion)
Before the deal	52.8	29.4	82.2
Synergy			18.0
Merged value			100.2
Shareholders get	57.2 per cent	42.8 per cent	100 per cent
Which is now worth	57.3	42.9	100.2
Share of the gain	4.5	13.5	18.0

Source: Professor Ian Giddy, NYU.

Exhibit 3.5 depicts the synergy equation. Companies may add value to the target by increasing its profitability or advantage horizon. Acquisitions need not be made with synergy in mind. It is possible to make money from non-synergistic acquisitions as well. Indeed, LBO firms like Clayton, Dubilier and Rice, and companies like Thermo Electron and Phelps Dodge generate returns of 18–35 per cent p.a. through non-synergistic acquisitions. As can be seen from Exhibit 3.6, operating improvements are a big source of value creation. A firm is essentially a collection of capabilities, which when applied to business opportunities create competitive advantage for the firm and generate returns to shareholders. The ability to create value depends on the firm's ability to mobilize an organization to form new combinations of capabilities. Better post-merger integration could lead to abnormal returns even when the acquired company is in an unrelated business. Managerial talent is one of the most important instruments in creating value, apart from other sources like cost reductions, revenue enhancements and improvements in operating profit margin, cash flow position and so on. Many a time, executive compensation is tied to the changes in cash flow in the post-merger period. Providing equity stake in the company induces executives to think and behave like shareholders. Some non-synergistic acquirers offer up to 20 per cent equity stake in the company.

EXHIBIT 3.5
Merger gains

Value of synergy

Transaction cost

Stand-alone value
of target

Combined
value
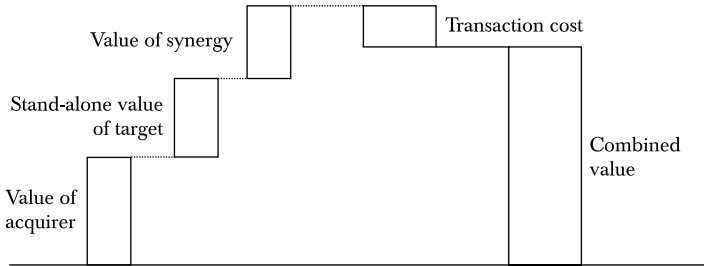
Value of
acquirer

EXHIBIT 3.6
Value creation in acquisitions

| Acquisition + NPV of subsequent investments | Normal gain from the market | Industry gain over market | Financial leverage | Operating improve-ments | Entity value |
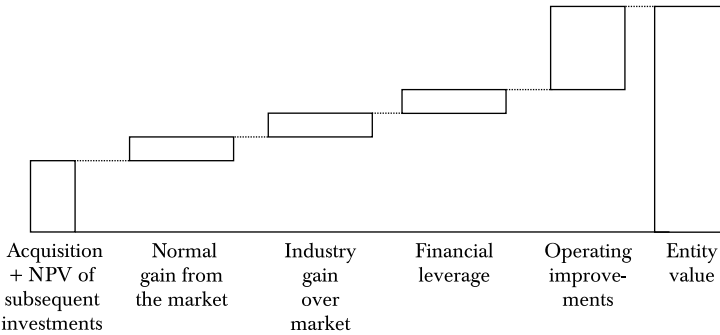
Source: Anslinger and Copeland (1996).

Free Cash Flow Valuation

One of the essential steps in M&A is determining the value of the target company. There are several approaches for measuring the value of the target firm. One of the popular methods is the DCF (Discounted cash flow) methodology. In the DCF approach, the value of the business is the future expected cash flow discounted at a rate that reflects the riskiness of the projected cash flows. This methodology is used to value companies, since firms are essentially collection of projects. The DCF methodology is founded on the principle that it is inappropriate to capitalize earnings per se. One must also take into account the investment required to generate those earnings. Consequently, cash flows are obtained by deducting net capital expenditure and incremental

working capital investment from net operating profits after taxes. The steps involved in the valuation are:

Step 1: Determine Free Cash Flow

Free cash flow is the cash flow available to all investors in the company –both shareholders and bondholders–after consideration for taxes, capital expenditure and working capital investment.

> Free cash flow = NOPAT + Depreciation – Capital expenditure
> – (+) Increases (decreases) in working capital
> investment

where

NOPAT	=	Net operating profit after tax
	=	Earnings before interest but after taxes
	=	EBIT (1 – tax rate)
EBIT	=	Revenue – Cost of goods sold – Operating expenses – Depreciation

Estimation of cash flows requires NOPAT, capital expenditure and net working capital. In calculating NOPAT, interest is not deducted because the discount rate, WACC, incorporates after tax cost of debt.

The physical assets of a company depreciate and hence need to be replaced to maintain a certain level of growth in sales. Usually, capital expenditure is estimated as a constant percentage of revenues. Capital expenditure can be either positive or negative depending on whether the company is making or liquidating its investments. If Capex is negative, it is a source of funds. To gain an estimate of the capital investment required per dollar of sales increase, take the sum of all capital investments less depreciation over the last 5 or 10 years and divide this total by the sales increase from the beginning to the end of the period.

The working capital investment should not include cash and other equivalents, that is, non-cash working capital is to be taken into consideration. Free cash flows thus obtained can be either positive or negative depending on whether the business is generating a surplus or a deficit under a specific plan of growth. Due care must be taken in estimating the working capital investment. Actual year-to-year balance

sheet changes often do not reflect the average or normal needs of the business during the year.

Operating working capital is defined as:

> Transaction cash balance

Plus: Accounts receivable
Plus: Inventory
Plus: Other current assets
Less: Accounts payable
Less: Taxes payable
Less: Other current liabilities

CF_t = Cash flow in year t = $S_{t-1} (1 + g_t) (p_t) (1 - T) - (S_t - S_{t-1}) (C_t + W_t)$

> where S = Sales
> p = Profit margin = EBIT as a percentage of sales
> T = Income tax rate
> C = Capital investment required (net of depreciation) per dollar of sales increase
> W = Net working capital per dollar of sales increase
> g = Growth rate

Estimate the most likely incremental cash flows to be generated by the target company, with the *acquirer as owner* (and not on an as is basis). Note that financing is not incorporated in the cash flows. Suitable adjustments for the specific financing of the acquisition will be made in the discount rate. The forecast of free cash flows requires the following inputs:

1. Initial sales before the start of the forecast period.
2. Growth rate in sales for the entire forecast period. The growth rate may remain constant or may change.
3. The ratio of EBIT/Sales (profit margin) for the entire period.
4. The ratio of total operating capital (that is, Capex + working capital investment) to sales for the period.

Thus,

> $Sales_t = Sales_{t-1} * (1 + g_t)$
> $EBIT_t = Sales_t (p_t)$

Asset requirement = a_t = $[(FA + WC)/S]_t$

$(FA + WC)_t$ = $Sales_t * [(FA + WC)/S]_t$

Step 2: Estimate a Suitable Discount Rate for the Acquisition

The acquiring company can use its weighted average cost of capital based on its target capital structure only if the acquisition will not affect the riskiness of the acquirer. If the acquirer intends to change the capital structure of the target company, suitable adjustments for the discount rate should be made. The discount rate should reflect the capital structure of the company after the acquisition. To calculate the discount rate:

- Estimate the asset beta for the target using the relationship.
  $\beta_A = \beta_E (E/V)$, where E/V is the equity-to-value ratio and β_E is the equity beta. The asset beta may also be obtained by taking the average asset betas of comparable firms in the industry.
- Re-lever the asset beta at various debt ratios (say, from 0 to 60 per cent) using the same relationship and find levered equity beta for the target.
- Estimate cost of equity at various debt ratios.
- Similarly, estimate cost of debt at various debt ratios.
- Calculate WACC as the weighted average of costs of debt and equity, the weights being target, market value proportions of debt and equity.

Step 3: Calculate the Present Value of Cash Flows

Since the life of a going concern, by definition, is infinite, the value of the company

= PV of cash flows during the forecast period + terminal value

We can set the forecast period in such a way that the company reaches a stable phase after that. In other words, we are assuming that the company will grow at a constant rate after the forecast period. The period of high growth can be anywhere from three to 20 years (may be even more for some computer software firms) depending on the type of business, size of the market, entry barriers, availability of substitutes, number of players in the market and so on.

Step 4: Estimate the Terminal Value

The terminal value is the present value of cash flows occurring after the forecast period. If we assume that cash flows grow at a constant rate after the forecast period, the terminal value

Terminal value = $[CF_t (1 + g)]/k - g$
where CF_t = Cash flow in the last year
$\qquad$ g = Constant growth rate
$\qquad$ k = Discount rate

Step 5: Add Present Value of Terminal Value

Step 6: Deduct the Value of Debt and other Obligations (say, Restructuring Charges) Assumed by the Acquirer

An Illustration

The forecast of free cash flow for a company is shown in Exhibit 3.7. The acquiring company's management expects the company to grow at 15 per cent per annum. The cost of capital for the target company is 14.62 per cent. The present value of cash flows amounts to US$ 39.09 million, assuming that the acquiring company will not achieve any operating improvements or make changes in the capital structure. The cash flows are expected to grow at 10 per cent forever after 2004.

$\qquad$ PV of free cash flow during forecast period = US$ 39.09 million.
$\qquad$ Enterprise value = Value of the company during forecast period + terminal value.

EXHIBIT 3.7 **Free cash flow forecast**								
Years (US$ million)								
	1	2	3	4	5	6	7	8
Sales	162.13	204.69	235.39	270.7	311.31	358.01	411.71	473.46
NOPAT	10.62	11.22	11.72	12.72	14.41	16.21	18.13	20.11
+Depreciation	3.14	2.13	2.68	2.82	2.96	3.11	3.26	3.42
Less: Capital exp.	0	0.63	2.36	1.79	1.88	1.97	2.07	2.17
Increase in W.C.	0	6.44	4.12	6.10	9.45	11.67	12.97	14.32
Free cash flow $	13.76	6.28	7.37	7.65	6.04	5.68	6.35	7.04
PV of FCF US$ 39.09 million								

Approach 1: Terminal Value is a Growing Perpetuity

$$\text{Terminal value} = FCF_t \, (1 + g)/(k - g)$$
$$= 7.04 \, (1.10)/(0.1462 - 0.10)$$
$$= \text{US\$ } 167.6 \text{ million}$$

Present value of terminal value = 167.6 * PVIF (14.62, 7)
  = 167.6 * 0.384 = US\$ 64.46 million
Total value = US\$ (39.06 + 64.46) million = US\$ 103.52 million.

Since we are interested in buying only the shares of the firm, the value of outstanding debt should be deducted from the firm value to arrive at the value of equity. Assume that the company has debt amounting to US\$ 7.92 million.

Value of equity = 103.52 – 7.92 = US\$ 95.60 million.

As is evident, much of the target company's value comes from terminal value, which is sensitive to the assumption made about the growth rate of cash flows in perpetuity. There are three other ways in which terminal value can be estimated.

Approach 2: Terminal Value is a Stable Perpetuity

If there is no capital expenditure or capital expenditure exactly equals depreciation after the forecast period, meaning that the total capital does not grow anymore, cash flow equals profit after tax. In other words, when we assume that the company earns a rate of return on capital equal to the cost of capital irrespective of growth in sales,

$$\text{Terminal value} = [\text{Free cash flow/Discount rate}] = FCF/k$$
$$= [7.04/0.1462] = \text{US\$ } 48.15 \text{ million}.$$

Value of the firm = 39.09 + 48.15 = US\$ 87.24 million. The difference in value is almost US\$ 16.28 million.

Approach 3: Terminal Value as a Multiple of Book Value

The terminal value can also be estimated by multiplying the forecasted book value of capital by an appropriate market-to-book ratio (P/BV). Normally, the current M/B ratio is taken as proxy for the future.

Consider the following example.

	In US$ million		
	Market value	*Book value*	*M/B*
Debt	8.0	8.0	1.0
Equity	15.0	10.0	1.50
Total capital	23.0	18.0	1.28

The current M/B ratio is 1.28. If the book value of capital at the end of forecast period is US$ 30 million, terminal value = 30 * 1.28 = US$ 38.40 million.

Approach 4: Terminal Value as a Multiple of Earnings

The terminal value under this method is established by multiplying the forecasted terminal year profits by an appropriate price-earning multiple. As usual, the current P/E multiple can be used as proxy for the future.

Current P/E multiple = Current market value of company/Current profit after tax.

To illustrate, if the current market capitalization is US$ 57.62 million and profit after tax is US$ 8.23 million, P/E = 57.62/8.23 = 7.

Terminal value = Last year profits * P/E multiple

If the last year profits are US$ 20.11 million

= US$ 20.11 * 7 = US$ 140.8 million.

Obviously, the method adopted affects the final value placed on the company's equity. These four methods might give four different answers. The DCF approach can capture the value of assets in place. Some components of the acquisition are hard to quantify. Consequently, the final price paid by the acquirer might be much higher than the DCF value obtained. But the premium paid for the synergy should not be out of proportion.

A sensitivity analysis may be conducted for pessimistic and optimistic values of key financial variables like sales growth rate, profit margin, working capital investment, capital expenditure, period of high growth and so on. The end-product of such an analysis is a range of prices within which the acquisition price may lie. Obviously, the acquirer would want to lower the price as much as possible, and the opposite is true for

the target. The important message is that the acquirer should consider not only what the target may be worth to the buyer, but also what the target's next best alternative is likely to be. For example, suppose that when valued as a stand-alone, a target is worth US$ 100, whereas due to synergies, the target is worth US$ 150 as part of the buying firm. A key element in the negotiation process is the value of the target to *another bidder*. If the synergy is unique to the buyer, the buyer may purchase the company for one buck more than the stand-alone value (US$ 101). On the other hand, if the synergy is available to other bidders as well, the buyer may have to raise the bid closer to US$ 150. In other words, the valuation must take into account the uniqueness of synergy and the likely range of prices affordable by other bidders. To sum up, the valuation has three elements—estimation of cash flows, estimation of discount rate and sensitivity analysis.

We could think of the target company's value as:

Value to buyer = value to seller + value added by buyer + change in value to buyer if the target firm is acquired by a competitor.

The first component is the DCF value of the target firm in its current form with the current growth rate, current financial plan and such others. The second component, value-added by the acquirer, comprises synergy to acquirer, cost savings, value of new strategy after the acquisition, proceeds from sale of redundant assets adjusted for taxes, benefits from improvement in credit rating and other financing side-effects. The third component is the gain or loss to the acquirer if the competition manages to acquire the target firm. The sum total of these three components gives the maximum value of the target firm.

Estimation of the Value of Synergy

Assume that a company has forecasted gains in operating income that arise due to acquisition. The gains in operating income can come from two sources: revenue enhances and cost reductions. Revenue may increase due to better pricing or volume gains (that is, increase in market share), or better differentiation/segmentation. Reducing head count, overheads and purchase costs are some generic strategies for reducing costs. Given here is a (hypothetical) forecast of gains estimated by an acquirer.

	Years (US$ million)			
	1	*2*	*3*	*4*
Gain in operating income due to				
Revenue increases	20	50	100	150
Cost reductions	30	100	200	300
Total	0	150	300	450

Assume that the terminal growth rate is 2 per cent.

$$\text{Terminal value} = \frac{450\,(1.02)}{(k-g)}$$

The gains in operating income and cost reductions result in higher profit after tax (after adjusting for taxes). The blended cost of equity for the combined entity should be used to discount the stream of changes in profit after tax due to acquisition, because synergy will flow to the shareholders of both companies.[5]

The blended cost of equity for the combined entity = $R_f + \beta_{E,\text{blended}}$ (risk premium)

$$\beta_{E,\text{blended}} = \beta_{A,\text{weighted}}(V_{\text{total}}/E_{\text{total}})$$

Weighted asset beta for the combined entity

$$= \beta_{A,\text{acquirer}}(V_{\text{acquirer}}/V_{\text{total}}) + \beta_{A,\text{target}}(V_{\text{target}}/V_{\text{total}})$$

$$V_{\text{total}} = V_{\text{acquirer}} + V_{\text{target}}$$

where value, V = Book value of debt + Market value of equity, respectively.

Market value of equity = Number of shares * Pre-announcement stock price.

Further, β_A (either for the acquirer or the target) = β_D (D/V) + β_E (E/V),

where β_D = beta of debt (a small number, say 0.1).

β_E = beta of equity

D = book value of debt

[5]The appropriate discount rate is the cost of equity and not the cost of capital because the numerator in the series is changes in profit after tax, which shareholders receive.

$V = D + E_{\text{market value}}$

To estimate the cost of equity for the combined entity:

- Estimate asset beta for both the companies, given β_E, D, E and, hence, V.
- Estimate asset beta for the combined entity (weighted asset beta) with respective values of companies as weights.
- Estimate equity beta for the combined entity by using the weighted beta calculated above.

$$\beta_{\text{E,blended}} = \beta_{\text{A,weighted}}(V_{\text{total}}/E_{\text{total}})$$

Cost of equity for the combined entity = $R_f + \beta_{\text{E,blended}}$ (risk premium).

As pointed out earlier, a company may lose its market share and, hence, revenues (profits), if the competition acquires the target. Assume that the stream has been forecasted for the next four years and is expected to grow at 2 per cent in perpetuity.

	Years (US$ million)			
	1	2	3	4
Loss in operating income (US$ million)	(0)	(50)	(100)	(175)
Terminal value				$\dfrac{175 \times 1.02}{(k-g)}$

The appropriate discount rate for this stream is the *acquirer's* cost of equity.

The sum of present values of the two streams, such as revenue enhances + cost reductions and loss in operating income, represents the value of synergy. Dividing it by the number of target company shares gives the PV of synergy/share.

The value of target = base value + synergy
where base-case value = pre-announcement stock price.[6]

[6]Market value is the best basis for establishing base-case (stand-alone) value as long as the stock price has not been bid up in anticipation of a takeover bid, as it provides a compromise measure of investors' estimates of an asset's present value. If there is a run-up in stock price just before the announcement, one can infer that the price already incorporates the value of synergy partly or wholly.

If pre-announcement stock price of the target is US$ 50; present value of revenue enhances and cost reduction per share are US$ 30; the present value of loss in operating income if the target is acquired by a competitor is US$ 20, then the value of the target is US$ 100 (=US$ 50 + 30 + 20) per share. This is the maximum price that the acquirer can afford to pay without making a loss, assuming that the forecasts are accurate.

Adjusted Present Value

Discounting free cash flow at WACC works reasonably well when the company targets a constant debt-to-value ratio. The corporate WACC used in many valuations is based on the assumptions that the cash flows of the target company are about as risky as that of the acquiring company and that the target company will maintain a similar capital structure as that of the acquiring company. Both are restrictive assumptions.

The APV (adjusted present value) approach is a good alternative when companies target an absolute amount of debt. A transaction can be treated as though it is all-equity financed and then this base-case value can be adjusted to account for financing effects like interest tax shield, bankruptcy costs and such others.

APV unbundles all the components of NPV and analyses each one separately, whereas WACC bundles all financing side-effects into the discount rate.

	Base-case value		Value of financing side-effects
APV =	Value of project if all-equity financed	+	Interest tax shields Bankruptcy costs financed

The first step in calculating APV requires the calculation of present value of the target company's cash flows, assuming all-equity financing.

Consider a hypothetical example. The cash flows of a company are given here.

Year	NOPAT	Capital exp.	Dep.	$\Delta W.C$	(US$ million) Net cash flow
(1)	(2)	(3)	(4)	(5)	(6) = 2+4−3−5
1	60	30	20	20	30
2	70	32	22	22	38
3	75	35	24	23	41
4	80	37	26	25	44
5	85	40	28	27	46

Cash flows are expected to grow at 7 per cent forever, thereafter.

$$\text{PV of terminal value} = \frac{46\,(1.07)}{(k-0.07)\,(1+k)^5}$$

The unlevered value is obtained by discounting all the cash flows at the unlevered cost of equity.

$$= R_f + \beta_u\,(\text{risk premium})$$

where β_u = unlevered beta or asset beta.

The asset beta is the weighted average of betas of debt and equity. That is,

$$\beta_A = \beta_D\,(D/V) + \beta_E\,(E/V)$$

If we assume that the beta of debt is zero,

$$\beta_A = \beta_E\,(E/V)$$

A problem arises when the target company is unlisted. Since unlisted companies, by definition, do not have stock market data, one cannot estimate either equity or asset betas directly. One can, however, estimate asset beta by looking at comparable companies. Assume that the target, an unlisted company, has four 'comparable' firms in the same industry group (similar line of business and size). Their betas and D/E ratios are given here:

Firm	Beta	D/E
1	1.0	0.50
2	0.6	0.0
3	0.8	0.4
4	0.9	0.45

Company 2 has no debt. The cost of equity for this company can be taken as proxy.

Assume the following CAPM parameters:

Rf = 7 per cent,[7] β_A = 0.60, market premium = 7.5 per cent

Cost of unlevered equity = 7 + 0.60 (7.5) = 11.5 per cent

The PV of cash flows = [30 * PVIF (11.5 per cent, 1) + … + 46 * PVIF (11.5 per cent, 5) + Present value of terminal value]

PV of cash flows during forecast period = US$ 142.62 million

$$\text{Terminal value} = \frac{46\,(1.07)}{(0.115 - 0.07)} = \text{US\$ 1093.77 mill}$$

$$\text{PV of terminal value} = \frac{1093}{(1.15)^5} = \text{US\$ 543.80 million}$$

All-equity value = US$ 142.62 million + US$ 543.80 million

= US$ 686.40 million.

The acquisition price of US$ 600 million will be financed with US$ 300 of debt. It will be brought down to US$ 200 million in five years. The indebtedness is expected to remain at that level forever.

End of year	*Debt (US$ million)*
0	300
1	280
2	260
3	240
4	220
5	200

Present value of interest tax shields = PV of tax shields during the first five years + PV of perpetual tax shields after year five.

Tax shield = Interest rate * Amount of debt outstanding * Tax rate

Assume a tax rate of 35 per cent and interest rate of 14 per cent.

PV of tax shield during the first five years = [0.14 * 300 * 0.35 * PVIF (14,1)] + … + 0.14 * 220 * 0.35 * PVIF (14,5)]

= US$ 44.89 million

[7]10-year T-Bond Rate, say

$$\text{Terminal value of tax shields} \ = \ \frac{0.14*200\ *0.35}{0.14\ (1.14)^5}$$
$$= US\$\ 36.84\ \text{mill}$$

The cost of debt is used as discount rate on the assumption that tax shields are about as uncertain as debt payments generating them. If tax shields are considered riskier than interest payments, a higher rate may be used.

Present value of tax shields = 44.89 million + 36.84 million
= US$ 81.73 million

APV = base-case value + PV of tax shield – acquisition price

APV = US$ 686.40 + 81.73 – 600 million = US$ 768.13 – 600
= US$ 168.13 million.

Adjustment for incremental bankruptcy cost can be made either subjectively or by taking suitable proxies. The acquisition price of US$ 600 million compares well with the base-case value (US$ 686 million). An acquirer should look for making money from incremental improvements in operations rather than good financing. If tax shields evaporate or bankruptcy cost exceeds tax shields, the value will never be realized.

Capital Cash Flow Valuation

In free cash flow valuation, the weighted average cost of capital (WACC) is used to discount cash flows. The WACC is supposed to capture the tax advantage of debt (WACC incorporates post-tax cost of debt); the cost of debt and cost of equity are both opportunity costs, each consisting of time value and risk-premium. WACC is a catch-all for risk and tax advantage of debt. The common practice is to increase the discount rate if the project is more risky. The methodology assumes that a company targets a debt-equity blend. Because WACC changes when debt capital structure changes, the free cash flow method cannot be easily implemented in many situations such as Leveraged Buyouts. Since the debt ratio changes every year, it is inappropriate to use a single discount rate (WACC) for all the cash flows (in all the years). Intuitively, we would expect the discount rate to fall when leverage falls because the cash flows to equity investors

become less risky. In short, one should come up with a different cost of equity for each of the years.

We know that:

$$\text{Assets} = \text{debt} + \text{equity}$$
$$A = D + E$$
$$\beta_A \, A = \beta_D \, D + \beta_E \, E$$

Ignoring the systematic risk of debt,[8] we get

$$\beta_A \, A = \beta_E \, E$$
or $\quad \beta_E = \beta_A \, [A/E]$
where A is firm value, D+E

Using this relationship, one can come up with values of beta and by extension, cost of equity for all the years based on the leverage in existence in that year (A/E essentially measures leverage). These discount rates may be used to discount equity cash flows to estimate the value of the company's equity.

An algebraically equivalent, yet superior, method is the capital cash flow valuation.[9] Free cash flow valuation excludes interest tax shields because the discount rate, WACC, incorporates the tax advantage of debt. In capital cash flow valuation, free cash flows plus interest tax shields are discounted at *Pre-tax* WACC (expected asset return). Since the asset return does not change when capital structure changes, it is easier to implement capital cash flow valuation.

Capital cash flow = net income + depreciation − capital expenditure
− Δworking capital + *cash interest*

or

= EBIT (1 − T) + depreciation − capital expenditure − Δworking capital + *interest tax shields*

It is easier to implement the former approach because it incorporates corporate estimates of taxes that reflect the special circumstances facing

[8]The beta of debt is assumed to be zero. This is a restrictive assumption when leverage is high.
[9]Richard, S.R. 2000. 'Capital Cash Flows: A Simple Approach to Valuing Risky Cash Flows', Working Paper, Harvard Business School, March.

the firm, rather than mechanically finding the product of tax rate and taxable income.[10]

The appropriate discount rate is a before tax rate because the tax benefits of debt are already included in the capital cash flows. The correct discount rate is the pre-tax WACC.

Pre-tax WACC = weighted average costs of debt and equity =

$(D/V) K_D + (E/V) K_E$

D/V and E/V are debt-to-value and equity-to-value ratio, respectively; K_D and K_E are costs of debt and equity.

$$\text{Cost of debt} = K_D = R_f + \beta_D \text{ (risk premium)}$$
$$\text{Cost of equity} = K_E = R_f + \beta_E \text{ (risk premium)}$$

$$\text{Pre-tax WACC} = \frac{D}{V}(R_f + \beta_D * R_P) + \frac{E}{V}(R_f + \beta_E * R_P)$$
$$= R_f + (D/V \, \beta_D + E/V \, \beta_E) \, R_P$$
$$= R_f + \beta_A \, (R_P)$$

Since $\quad \beta_A V = \beta_D D + \beta_E E$
or $\beta_A = \beta_D D/V + \beta_E E/V$

Note that the discount rate depends on R_f, β_A and risk premium, and does not incorporate D/V or E/V, that is, the pre-tax WACC is independent of capital structure and hence can be applied to all cash flows regardless of the capital structure in existence. In other words, pre-tax WACC, which is a function of asset beta, is constant. Both free cash flow valuation and capital cash flow valuation provide the same answer. CCF valuation, however, is easier to implement.

An Illustration

Clariant is in the process of purchasing Synergon. Forecasting cash flows for Synergon under Clariant's management involves suitable assumptions regarding sales growth rate, profit margin, capital expenditure and net working capital for every dollar of sales increase. The relevant assumptions for the forecast period are given here.[11]

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[10]In other words, in many instances, it does not reflect the actual tax paid.

[11]For more details see, for example, Rappaport, A. 1979. 'Strategic Analysis for Profitable Acquisitions', *Harvard Business Review*, July–August: 99–109.

Rappaport, A. 1986. *Creating Shareholder Value: The New Standard for Business Performance*. New York: The Free Press., or any standard text on valuation.

	Years	
	1–5	*6–10*
Sales growth rate, g per cent	15	10
Profit margin, EBIT/Sales, per cent	0.18	0.15
Tax rate per cent	36	36
Capex per dollar of sales increase (C)[12]	0.30	0.15
Working capital per dollar of sales increase (W)	0.15	0.10

The company's value is expected to be stable after the forecast period when the company enters a stable phase. The current financial details of Synergon are given in Exhibit 3.8.

EXHIBIT 3.8 Recent financial statements of Synergon	
Income statement *Synergon*	*In US$ million*
Sales	350
EBIT	32.16
Interest @ 12 per cent	12.86
Net income	**24.12**
No. of shares Outstanding (million)	**16.08**
Balance sheet	
Debt	107.20
Equity	160.80
	268.00
Fixed assets	
Less: Accumulated Depreciation	216.00
Net working capital	50.00
Other assets	2.00
	268.00

WACC 12 per cent

The cash flow in any year $= CF_t = S_{t-1}(1+g_t)(p_t)(1-T_c) - (S_t - S_{t-1})(C_t + W_t)$

where p = EBIT/Sales
S = Sales
T_c = Tax rate

[12]Net of depreciation.

Thus, cash flow in Year 1 = 350(1+0.15)(0.18)(1 0.36) – (402.50 350)(0.30+0.15)
= US\$ 46.368 – 23.625 million

    = US\$ 22.743 million

The projections for the first 10 years are shown in Exhibit 3.9.[13] Assume that the WACC for the company based on a long-run capital structure is 12 per cent.

If we assume that the company generates normal returns from year 10, that is, the company's value is unaffected by growth, then the terminal value can be estimated as a perpetuity.

$$\text{Terminal value} = \frac{\text{FCF}_{10}}{\text{Discount rate}} = \frac{83.03}{0.12} = \text{US\$ 691.90 million}$$

PV of Terminal value = TV * $[1/(1+k)^{10}]$ = US\$ 171.26 million
Total present value, that is, firm value = US\$ 317.08 million
(245.82+171.26)

Synergon's Debt Assumed US\$ million	107.2
Value of Synergon's Equity US\$ million	209.88
Value/Share US\$	13.05

Clariant may pay a price higher than US\$ 13.05 if cash flows can be enhanced for the same level of investment or may reduce investment for the same level of cash flows.

Concluding Comments

This chapter outlined some of the sensible reasons for mergers, action areas and the valuation approaches. There are essentially two ways of valuing targets: the DCF approach and the relative value approach, which makes use of multiples (see Appendix). The final price is often a product of negotiations between the concerned parties and the pre-announcement stock prices of the companies involved. Acquisitions work only if:

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[13]The sales growth rate and the assumptions regarding margins, capex and working capital investment are usually extrapolated from the current year (as base year) based on the assumption that current year is a normal year. One might take the average of the past two or three years if there is a reason to believe that current year is too good or too bad so that the trend is not unrealistic.

EXHIBIT 3.9

Forecast of cash flows for Synergon (US$ million)

Year	Sales	EBIT	P_t	NOPAT	S_t-S_{t-1}	$C+W$	Capex$+WC$	FCF	PV-factor	PV
0	350									
1	402.5	72.45	0.18	46.368	52.5	0.45	23.625	22.743	0.893	20.309499
2	462.875	83.31	0.18	53.3184	60.375	0.45	27.16875	26.14965	0.797	20.84127105
3	532.3	95.8	0.18	61.312	69.425	0.45	31.24125	30.07075	0.712	21.410374
4	612.15	110.18	0.18	70.5152	79.85	0.45	35.9325	34.5827	0.636	21.9945972
5	703.97	126.71	0.18	81.0944	91.82	0.45	41.319	39.7754	0.567	22.5526518
6	774.37	116.15	0.15	74.336	70.4	0.25	17.6	56.736	0.507	28.765152
7	851.8	127.77	0.15	81.7728	77.43	0.25	19.3575	62.4153	0.452	28.217156
8	937	140.55	0.15	89.952	85.2	0.25	21.3	68.652	0.404	27.735408
9	1,030.7	154.6	0.15	98.944	93.7	0.25	23.425	75.519	0.361	27.262359
10	1,133.75	170	0.15	108.8	103.05	0.25	25.7625	83.0375	0.322	26.738075
Total										245.8211027

- There are operating and financial improvements.
- The acquisition price is not too high.
- The incumbent management is competent.
- There is top management involvement in the process.

Many companies do not recognize the need to evaluate the target company's marketing strengths although the acquisition itself is intended to increase sales growth or market share. Particular attention should be paid to the company's brands, pricing policy, distribution, product development capabilities and promotion.

The DCF methodology captures the value of assets-in-place. Often, the option component embedded in acquisitions could be substantial. The DCF methodology ignores managerial flexibility to time the purchase or new business opportunities that may arise due to a 'platform acquisition' in a country or a market. This is the subject of the next chapter.

Appendix 1: Valuation Using Multiples

In valuing targets, decision-makers often use multiples in conjunction with the DCF methodology. Several multiples are popular.

> The *price-earnings multiple* is the ratio of stock price and earnings per share for the most recent four quarters or market capitalization and net income. The (average) price-earnings multiple commanded by comparable transactions when multiplied by earnings per share (of the target) yields a per share price for the target firm. Alternatively, one may estimate the price using the DCF methodology and, hence, the P/E multiple for the acquisition, and compare it with those of comparable transactions.

The Gordon valuation model suggests that:

$$P = \frac{D}{k - g}$$

where P is the stock price, D is the annual dividend, k is the firm's cost of equity and g is the firm's growth rate.

This can be rewritten as:

$$P = \frac{(1 - b)E}{k - g}$$

where b is the retention ratio and E is earnings.

Dividing both sides by E,

$$P/E = \frac{(1 - b)}{k - g}$$

Thus, P/E multiple is a function of retention ratio, cost of equity and growth rate.

The *price-to-sales multiple* is the ratio of stock price and sales per share or market capitalization and sales. The P/S multiple implied by the DCF valuation may be compared with the P/S multiples of comparable transactions.

The *price-to-book value* multiple is the ratio of market capitalization to book value of shareholders' equity.

The *enterprise value-to-EBITDA* multiple is the ratio of EV (that is, market value of equity plus book value of debt) and earnings before interest, tax, depreciation and amortization. Applying this multiple yields *firm* value, and not *equity* value.

Appendix 2: Estimating Growth Rates

A company's equity value is largely determined by the growth in sales, earnings and dividends. Growth rates can be measured in several ways:

Arithmetic versus Compound Growth Rates

The arithmetic average of growth rates in sales for the past 10 years, say, is simply the sum of annual growth rates for the period divided by 10. Compound average, in contrast, measures the rate at which the sales has grown for the entire period, using the equation:

$$S_n = S_o (1+g)^n$$

where S_n is the sales in the 10th year, S_o is the sales in the current year, g is the growth rate and n is the number of years. One can solve for g, given the value of all other variables.

Moving Average

A moving average is simply the average of growth rates for a specified period of time. Assume that the following data is available. You are required to calculate the 3-month moving average.

Growth rate for each time period per cent	3-month total	3-month moving average
5		
6		
5.5	16.50	5.50
6.5	18.00	6.00
7	19.00	6.33
7.5	21.00	7.00
8.0	22.50	7.50

The moving average may be calculated for any other period (say six months or one year). The moving average depicts the basic trend after removing seasonal fluctuations.

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Exercises

1. Refer to the data given here.

   Beta = 1.40, Market premium = 10 per cent, Long-term T-Bond rate = 12 per cent.

   Pre-tax cost of debt = 13.5 per cent, Tax rate = 35 per cent, Target debt-to-value ratio = 0.45.

The working results for the past three years are given here.

	In US$ million		
	1995	*1996*	*1997*
Sales	9.0	9.9	11.0
EBIT	4.5	4.95	5.5
Depreciation	0.72	0.72	0.72

The company has made capital expenditure of US$ 0.72 million each year in the last three years. It is expected to grow at 10 per cent for the next three years and drop to 5 per cent thereafter, in line with growth in sales. Working capital is expected to be 15 per cent of sales. Additional depreciation for the next three years on the new equipment

will be provided on a straight-line basis. Free cash flows are expected to grow at 5.5 per cent in perpetuity after three years. Determine the value of the company.

2. The adjusted present value approach and the WACC approach should yield same results. Can you think of a situation when they diverge?

3. The executives of Nova Chemicals are evaluating a potential acquisition candidate–Reddy Chemicals. The forecast of free cash flow under the current management is given here.

		In US$ million					
	0	1	2	3	4	5	6
Revenues		455	551	800	1,080	1,195	1,255
COGS		341.3	414.9	596	811.10	893.9	941.3
SGA exp.		110.4	130	219.2	251.6	280.3	287.4
=NOPAT							
+ Depreciation		19	21	21	46.3	48.1	50
– Capex	100	8.1	9.5	13	16	16.3	17
–Working capital	25	4.1	5.5	6.0	7.1	8	9.7
Free cash flow							

Cash flows are expected to grow at 6.5 per cent after Year 6.

The executives of Nova Chemicals believe that NOPAT margin can be improved by 8 per cent and working capital investment can be cut by 20 per cent. Reddy Chemicals has a strong marketing network, which could be used to sell Nova's existing products. The arrangement is likely to generate savings of US$ 1 million per annum, for 8 years.

	For Nova (%)	For Reddy (%)
Cost of equity	20	22
Tax rate	35	35
Cost of debt	12.5	13.5
Target D/V	30	20

(a) Estimate the value of Reddy Chemicals under the current management.

(b) Estimate the value of Reddy for Nova Chemicals.

(c) Can Nova's cost of capital be used to discount the cash flows of Reddy Chemicals? If yes, when? If not, why not?

(d) Nova intends to increase debt by US$ 2.5 million. What is the value of interest tax shields to Nova? Assume that debt is permanent.

(e) Conduct a sensitivity analysis.

4. ABC Ltd is considering the acquisition of XYZ Ltd. The management of ABC believes that the cost of goods sold could be reduced by 1.5 per cent over the next 3 years (due to purchasing economies) and Administrative expenses could be brought down by 3 per cent. The forecast of income statement of XYZ under ABC is given here.

	In US$ '000		
Year	1	2	3
Sales	60,000	63,000	66,000
COGS	30,000	31,000	33,000
Depreciation	4,000	4,200	4,300
SGA	21,000	22,000	22,500

Assume that cash flow increases at 7 per cent after year 3.

ABC needs to incur expenditure on fixed assets and working capital to make operational improvements to XYZ, the details of which are given here.

Year	1	2	3
Capex	4,900	5,100	5,300
W.C	(510)	(540)	(550)

At a discount rate of 13 per cent, what is the maximum price that ABC should pay?

4

Valuation of Privately-Held Companies

Pitabas Mohanty

CHAPTER OBJECTIVES
- Highlights the issues involved in the valuation of private companies
- Provides an overview of alternate valuation approaches
- Suggests a methodology for estimation of cost of capital for unlisted firms

Valuation of private companies is very similar to valuation of any other economic asset. The free cash flows of the private company are forecasted and then discounted at a risk-adjusted discount rate to derive the value of the company. Though the valuation of a private company is similar to that of a public company, an analyst faces some additional constraints in finding the required inputs to value the company.

Why is Valuation of Private Companies Difficult?

A sizeable number of private companies are in their early stages of development and generate negative free cash flows. In the initial stages of the life of a company, the set-up costs in the form of capital expenditure, R&D expenditure and such others are high. To begin with, since the gestation period is long, the net operating profit after tax (NOPAT) of

a company itself would be low. The valuation of the company in such cases becomes sensitive to the assumption that an analyst makes when free cash flows turn positive. The problem is similar to valuation of distressed firms.

Second, while valuing a private company, one usually does not have access to past financial performance of the company. The problem gets manifested in two ways. The first is that since a sizeable number of private limited companies are new, there is a limit on the maximum number of years' data that one can get while analyzing the financial performance. Next, the information disclosure requirements for private companies are less stringent as compared to those for listed companies. In many countries, private companies are not required to file their income statements with the concerned authority although they may have to file their balance sheets every year. This makes it difficult to analyze the past financial performance of a private company. Consequently, forecasting free cash flows is difficult.

Third, if the purpose of valuation is to make the company go public, certain adjustments to free cash flows are to be made. One adjustment involves top management compensation. In private companies, withdrawal of profits by promoters is treated as dividend payment. However, when the company becomes public, the above expense needs to be treated as salary paid by the company.

Fourth, due to lack of availability of stock price data, estimation of beta (to estimate the cost of equity) for a private company is difficult. Usually, analysts estimate the beta of a public company by regressing the historical stock returns of the firm against that of a market index such as the S&P 500. Since private companies are not listed, analysts estimate the beta of another 'comparable' company (or the average of comparable firms) and use it to estimate the cost of equity for the private company.

Fifth, the capital asset pricing model (CAPM) assumes that investors hold diversified portfolios and hence demand compensation for bearing systematic risk only. Since the shareholders of a private limited company usually do not hold a diversified portfolio, they demand a premium for bearing unsystematic risk. Consequently, CAPM underestimates the true cost of equity for such firms.

Finally, the cost of capital used in valuation is a function of market value leverage ratio. Since the securities issued by private companies are not traded, it is difficult to get estimates of leverage.

Alternative Valuation Approaches

Though the DCF method is the most scientific method used to value a private company,[1] some analysts also use the multiplier method to value private companies. In this section, we will briefly discuss the two methods and see how they can be used to value a private company.

Multiplier Method (Relative Approach to Valuation)

Under the multiplier method, an analyst estimates valuation multiples like P/E or P/BV from publicly-traded firms.

Selection of a comparable company is a difficult exercise because of differences in size, risk and business of companies that are being compared. However, one must keep the following factors in mind while selecting a comparable firm. Let us assume that an analyst has decided to use the *price–earnings method* to value the company. From the Gordon valuation model, we know that:

$$P_0 = \frac{D_1}{r-g} = \frac{E_1 * \text{Payout-ratio}}{r-g}$$
$$\Rightarrow \frac{P_0}{E_1} = \frac{\text{Payout-ratio}}{r-g}$$

From the given equation, it is clear that we can compare the P–E ratio of the two companies, only if we can also compare their 'payout ratios', 'cost of equity' and 'g'.

Payout Ratio and Growth Rate

We know from basic corporate finance that the product of retention ratio and the return of equity equals growth rate.[2] That is,

ROE* Retention-ratio = Growth-rate
$\Rightarrow$ ROE* (1–Payout-ratio) = Growth-rate

Therefore, we must ensure that both companies have similar profitability ratios and similar growth profile. It is important to understand that a company can finance its growth through debt or external equity as

[1]Assuming that there are no real options to value.
[2]Here, we are assuming that the company is financing growth through internal accruals.

well, and that the above derivation of the growth rate formulae assumes that the company does not finance its growth through external debt or equity.

Cost of Equity

Second, one must also ensure that the costs of equity of the two firms are comparable. If one uses the CAPM to estimate the cost of equity, one must select a comparable firm in such a manner that the betas of the two firms are equal. The beta of a levered firm can be written as:

$$\beta = \beta_U \left(1 + (1-t)\frac{D}{E} \right) - \beta_D \frac{D}{E}$$

We can see from the above equation that the beta is a function of debt-to-equity ratio (financial risk).

From the above discussion, it becomes apparent that while selecting a pure-play company, we must ensure that the following factors are comparable for the two firms:

1. Profitability ratio
2. Growth opportunity
3. Business risk
4. Financial risk

In real life, analysts usually find out the median P/E ratio of all companies in the same industry and use that as a proxy for the P/E of the company being valued. This approach may not give us the correct answer all the time for the following reasons:

a) It is not necessary that all companies have similar profitability ratios and growth profiles. If the private company happens to be a new company, then it is very likely to have a below-median profitability ratio and above-median growth rate.
b) It is also quite possible that the financial risk of the private company is more favoured towards debt than a typical company in the industry.

However, one can keep the given guidelines in mind while finding the pure-play company.

Two other multiples–price-to-book value of a stock and price-to-sales of a stock–are also popular.

Price-to-Book Value (PBV) Method

Price-to-book value is estimated by dividing the stock price by the accounting book value per share. In this method, analysts multiply the P/BV ratio of a comparable firm with the BV of the company being valued. We can manipulate the Gordon valuation model to derive the following relationship:

$$P = \frac{D}{r - g} = \frac{E*b}{r - g}$$

where 'b' stands for payout ratio.

We know that $ROE = \dfrac{E}{BV}$

Therefore, $E = ROE * BV$. Substituting this in the Gordon model, we obtain:

$$P = \frac{ROE*BV*b}{r - g}$$

$$\Rightarrow \frac{P}{BV} = \frac{b*ROE}{r - g}$$

As can be seen from the obtained equation, we need to keep the same factors in mind (as we do in the P/E method) before selecting a pure-play company.

Similar analysis could be done for the price-to-sales multiple, to find out the factors that one must keep in mind while identifying a pure-play firm.

Price-to-Sales (PS) Ratio

P/S ratio is defined as the ratio of total market capitalization and total sales. Equivalently, it can be defined as the ratio of stock price and sales per share.

$$P = \frac{D}{r - g} = \frac{E*b}{r - g} = \frac{Sales*Operating\text{-}margin*b}{r - g}$$

$$\Rightarrow \frac{P}{sales} = \frac{Operating\text{-}margin*b}{r - g}$$

The multiplier approach is often supplemented by the DCF approach.

DCF Approach

The DCF approach is based on sound economic principles and hence is universally acclaimed to be one of the most scientific methods of valuing a company.

The value of a company is given by:

$$\text{Value} = \sum_{t=1}^{\infty} \frac{\text{FCF}_t}{(1+\text{WACC})^t}$$

Although the methodology is similar to that of valuing a listed company, there are some additional problems in applying the DCF approach to unlisted companies. These are discussed in the following section.

Determination of Cost of Capital

The cost of capital can be written as:

$$\text{WACC} = \frac{\text{Market value of equity}}{\text{Value of company}} * \text{Cost of equity} +$$

$$\frac{\text{Market value of debt}}{\text{Value of company}} * \text{Cost of debt} * (1 - \text{Tax rate})$$

Therefore, one needs estimates of market values of both debt and equity,[3] costs of debt and equity, and the cash tax rate to estimate the cost of capital of a company. The problems one encounters in estimating these parameters for a private company are discussed next.

Estimating the Market Value of Equity

Unlike a listed company, it is impossible to find the market value of equity of a private company because the stock is not traded. Further, the cost of capital is based on target market value capital structure. Quite often, the current book value leverage is taken as proxy for target market

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[3]Actually, all that one needs is the debt-to-equity ratio in market value terms.

value leverage. According to modern finance theory, investors demand returns based on market values and not book values. The two values rarely coincide. Unfortunately, measuring the market value of equity is difficult. The market value of equity is the present value of equity cash flows, but the discount rate used to discount ECFs itself is supposed to be based on the market value of equity. That is, there is a circularity problem.[4] This problem could be overcome by estimating the value of equity using book value proportions and a series of iterations.

The following example illustrates the problem.

Let us assume the following figures (Table 4.1) for a hypothetical company.

TABLE 4.1
Determination of market value of equity using iterative method

	Figures in million of US$ (where applicable)
Book value of equity	200
Book value of debt (= market value of debt)	100
Cost of debt (also equal to the coupon rate on bond)	5 %
Cost of equity	10 %
Cash tax rate	20 %
Return on equity	15 %
Growth rate	5 %

Let us assume that the market value of debt and the book value of debt are equal. This is equivalent to assuming that the pre-tax cost of debt and the coupon on the bond are also equal.

Let us also assume that we know the cost of equity for the company. Of course, cost of equity itself is a function of the financial leverage of a company. However, analysts usually find out the cost-of-equity figure independently (that is, without explicitly bringing the D/E ratio into picture). Since we discuss the issues relating to cost of equity separately, let us assume that this figure is known to us.

The other figures used in the above table can be found out directly from the financial statements of any company. We can see that the true value of the company is US$ 600 million (Table 4.2).

[4]For the mathematical derivation of the results, see Mohanty (2003), 'Note on Estimation of Cost of Capital', Unpublished paper, XLRI, Jamshedpur.

TABLE 4.2
Determination of cost of capital

	Figures in US$ million (where applicable)
Expected net income	30
Expected dividend[5]	25
Value of equity	500
Value of debt (assumed)	100
Value of company	600
True cost of capital	9 %

Let us assume that the analyst is trying to value this company using the standard FCF method. Since the stock is not traded in the market, he only knows the book value of equity. In that case, he can arrive at the 'true' cost of capital and value of equity by using the following procedure:

Iteration 1: Estimate the cost of capital using the book leverage weight. This way, one can get a starting estimate of the cost of capital equal to 8 per cent. The value of the company (after taking care of the net investment to support a continuous growth of 5 per cent) is US$ 800 million. This gives US$ 700 million as the value of equity.

Iteration 2: Now that we have some estimate of the value of equity, we can re-estimate the cost of capital by using US$ 700 million (rather than US$ 200 million) as the value of equity. This will give us a revised estimate of 9.25 per cent as the cost of capital. The revised value of the company and the value of equity are US$ 565 million and US$ 465 million, respectively.

Iteration 3: One can keep doing this till one reaches some convergence. One can stop after a stage when the difference between the equity values obtained from two consecutive iterations is very small. In this example, we try to solve the problem in nine iterations. Table 4.3 and the accompanying charts (Figures 4.1 and 4.2) explain the details.

[5]Here, since it is a growth company, we must increase debt by 5 per cent as well to keep the market D/E ratio constant. This has been factored into our calculation while estimating the dividend. It can also be verified that to support a growth of 5 per cent, the net investment for the next year will be US$ 10 million.

TABLE 4.3
Cost of capital and value of equity in different iterations

Iterations	WACC	MV of equity
1	0.08	700
2	0.0925	464.7058824
3	0.089375	509.5238095
4	0.090156	497.6653696
5	0.089961	500.5865103
6	0.09001	499.8535514
7	0.089998	500.0366233
8	0.090001	499.9908449
9	0.09	500.0022888

FIGURE 4.1
Graphical depiction of the value of cost of capital in different iterations

Estimation of WACC
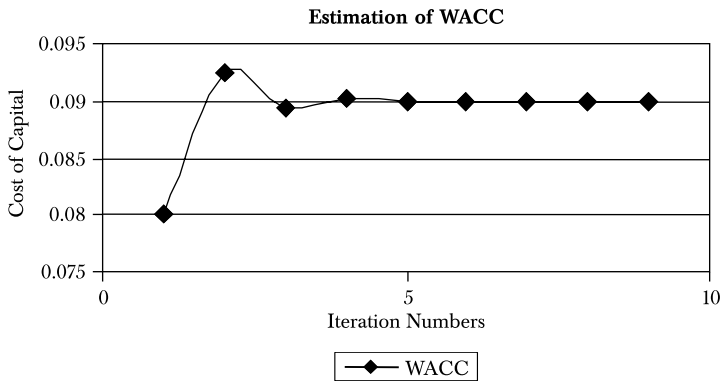
FIGURE 4.2
Graphical depiction of the value of equity in different iterations

Estimation of MV of Equity
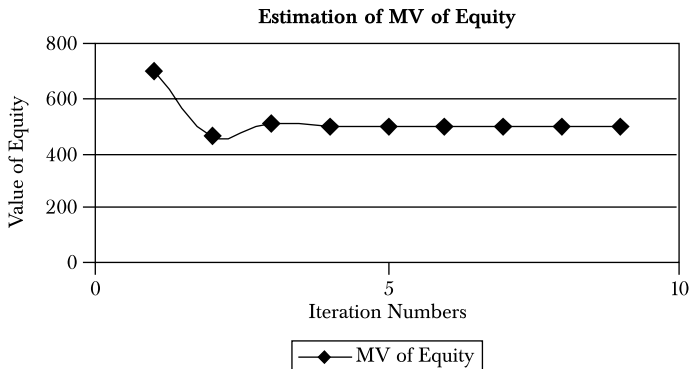
As can be seen from Figures 4.1 and 4.2, we get a very close figure after just about three iterations. In this example, we started our first iteration by using the book leverage to estimate the cost of capital. But as anybody knows, accountants can easily manipulate book leverage and therefore book D/E ratio might not reveal the true picture. It can however be shown that we get the correct value of the cost of capital and the value of the firm (and equity) even by using any arbitrary value of D/E ratio. To justify our claim, we show that we get the same values of equity and cost of capital even by using 7/3 as our debt-to-equity ratio.

In the following table (Table 4.4), the second column provides estimates of the cost of capital assuming 7/3rd as the debt-equity ratio. The third column gives the cost of capital if one were to use book-leverage.

TABLE 4.4
Cost of capital with an arbitrary starting value

Iterations	*WACC-arbitrary*	*WACC-BV*
1	0.058	0.08
2	0.098	0.0925
3	0.088	0.089375
4	0.0905	0.09015625
5	0.089875	0.089960938
6	0.09003125	0.090009766
7	0.089992188	0.089997559
8	0.090001953	0.09000061
9	0.089999512	0.089999847

FIGURE 4.3
Cost of capital in different iterations

Estimation of WACC
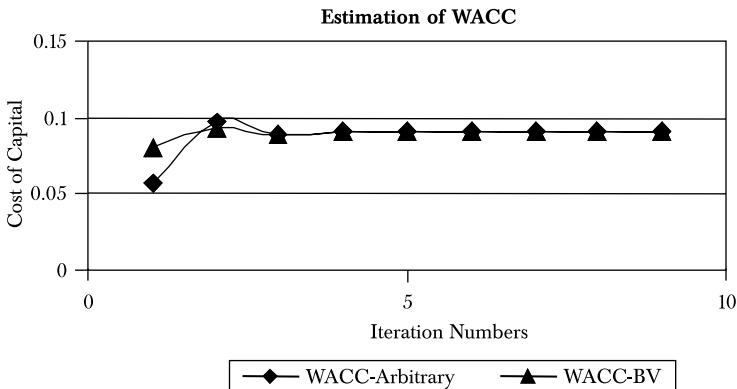
TABLE 4.5
Market value of equity in different iterations

Iterations	*MV of equity-arbitrary*	*MV of equity-BV*
1	2900	700
2	400	464.7058824
3	531.5789474	509.5238095
4	492.5925926	497.6653696
5	501.8808777	500.5865103
6	499.5316159	499.8535514
7	500.1172104	500.0366233
8	499.9707046	499.9908449
9	500.0073243	500.0022888

Estimating the Market Value of Debt

In the previous section, we assumed that the book value of debt and the market value of debt are equal. Since the securities issued by private companies are not traded, it is difficult to estimate the market value of debt. Private companies borrow money from the financial institutions and hence such debt instruments are not traded in the market.

Most analysts use the book value of debt as a proxy for the market value of debt.[6] In following suit, one has to use the weighted average coupon rate as a proxy for the cost of debt as well. Otherwise, one will arrive at a wrong estimate of the value of the company/equity (Table 4.5 and Fig. 4.4).

FIGURE 4.4
Equity value in different iterations

Estimation of Equity Value

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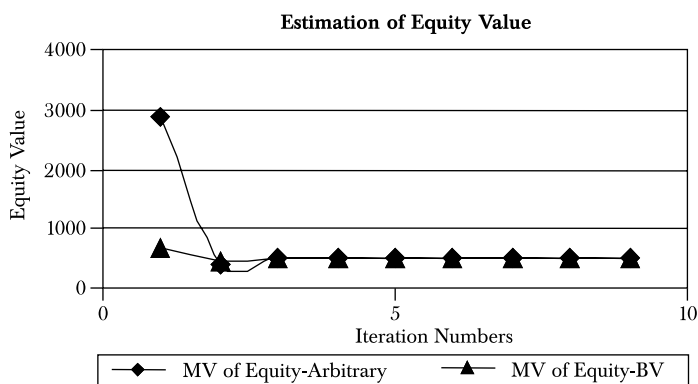
[6]Even in empirical research work, book value of debt is often used as a proxy for the market value of debt. See Berger and Ofek (1995), for example.

A simple example would clarify the point. Let us assume the following numbers for a hypothetical private company (Table 4.6) .

TABLE 4.6
A hypothetical example

Line items	Figures in US$ million (where applicable)
Net operating income	100
Coupon	10%
Face value of bond	100
Pre-tax cost of debt	12%
Market value of bond	83.33333333
Cost of equity	15%
Tax rate	30%
Net income	63

If one knows the actual values of all the given Line Items, the true value of the company would turn out to be US$ 520 million.[7]

Let us however assume that one does not know the market value of debt, but knows the pre-tax cost of debt. One can obtain the pre-tax cost of debt by using some statistical models. One can argue that it is easy to obtain the market value of debt once one knows the pre-tax cost of debt. In real life, however, one can obtain the pre-tax cost of debt much more easily as compared to the market value of debt. It is, for example, possible that a company has issued bonds at different points of time, at different coupon rates. If the exact details of these bonds are not given, it becomes difficult to know the market value of bonds.

An analyst has one of the following choices:

- Use the book value of debt as a proxy for the market value of debt. However, use the true cost of debt to find the values of firm and equity.
- Use the book value of debt as a proxy for the market value of debt. Use the coupon rate (weighted average coupon rate, if there are more than one issue) as a proxy for the true cost of debt.

The second method is better than the first method, and the first method invariably gives an inaccurate value of equity. Under the first method,

[7]For the sake of simplicity, we have assumed that the growth rate in cash flow is zero.

the cost of capital and the value of the firm turn out to be 13.73 per cent, and US\$ 509.8 million. Since the value of debt is assumed to be US\$ 100 million, the value of equity is US\$ 409.8 million. This is about 2.5 per cent less than the true value of equity, which is US\$ 420 million.

The second method yields a wrong estimate of the cost of capital (13.46 per cent) as opposed to the true cost of 13.91 per cent. This method, however, yields the correct value of equity. This is because the value of the company under the second method is US\$ 520 million, which gives us the true value of equity as US\$ 420 million (Table 4.7 for details).

TABLE 4.7
Value of equity under two different assumptions

Wrong method 1: Assume that BV of debt = MV of debt, True cost of debt	
WACC that one will obtain	0.137307692
Value of company	509.8039216
Less: Value of debt	100
Value of equity	409.8039216
Wrong method 1: Assume that BV of debt = MV of debt, Cost of debt = Coupon rate	
WACC that one will obtain	0.134615385
Value of company	520
Less: Value of debt	100
Value of equity	420

If the objective of the entire valuation exercise is to find the true value of equity, then the second method will always be preferable. One should not however jump to the conclusion that it is irrelevant to find the market value of debt once one knows the weighted average coupon rate. Although the second method gives us the correct value of equity, it still gives us the wrong value of the firm. If we are interested in finding the optimum debt-to-equity ratio of a company, or if we are interested in knowing the contribution of total debt to the total firm value, then we should know the true cost of debt and the true value of debt.

In sum, if one were to use the book value of debt as a substitute for the market value of debt, then it is preferable to use the weighted average coupon rate as the pre-tax cost of debt, for, this is the only way one can get the correct value of equity.

In the earlier discussion, we assumed that the growth rate of the firm is zero. This is an unrealistic assumption, however. Growth companies pose one more problem in valuation. Since the equity value grows at

a particular rate, the market value of debt must also increase at the same rate to ensure that the debt-to-equity ratio remains constant.[8] It therefore matters whether we increase the book value of debt or the market value of debt at a particular rate. This also has a bearing on the market value of equity, since this directly affects the free cash flow to equity.

If an analyst does not know the market value of debt and uses the book value of debt, then he is actually keeping the book-value of debt to market value of equity ratio constant. Implicit in this approach is the assumption that the free cash flow to equity also increases by the book-value of debt of the previous year multiplied by the growth rate. This, therefore, gives a wrong value of equity irrespective of whether we use the coupon rate or the actual cost of debt while estimating the cost of capital.[9]

Estimating the Cost of Debt

To estimate the cost of debt, I suggest that the following pecking order be used.

Pecking Order 1: Find the Yield to Maturity (YTM) of the Bond

If the debt instrument is trading in the market, then one can easily find the cost of debt. Once the market price of the bond is known, one can use the following equation to find the cost of debt of the company. In this equation, 'y' is the pre-tax cost of debt.

$$\text{Market price} = \frac{\text{Coupon}_1}{(1+y)^1} + \frac{\text{Coupon}_2}{(1+y)^2} + \cdots + \frac{\text{Coupon}_T}{(1+y)^T} + \frac{\text{Face value}}{(1+y)^T}$$

One can solve for 'y', given all other parameters, to get the pre-tax cost of debt.[10]

Here, we have assumed that the entire principal is repaid at the end of year T. The current market price is ex-interest. That is, last year's coupon has already been paid and the next coupon payment is due exactly after one year. We can always adjust for the accrued interest component in the calculation.

[8]For a detailed theoretical discussion, see Miles and Ezzel (1980).
[9]One can get a detailed discussion in Mohanty (2003).
[10]Any spreadsheet package can find the exact value of 'y'.

Theoretically, this is the best method to estimate the pre-tax cost of debt of a company. However, since the debt instruments issued by private companies are not listed, one cannot obtain the market value. Therefore, the suggested method cannot be used to find the cost of debt for a private company.

Pecking Order 2: Ask Someone Who Knows

If a company has borrowed money from commercial banks and financial institutions, one can ask the banks and the financial institutions as to what interest they would charge if they were to lend at that point in time. The philosophy behind this method is: '*If you do not know something, ask someone who knows.*'

Pecking Order 3: Use the Credit Rating of the Company

Given the credit rating of a company, it is possible to estimate the cost of debt for the company by looking at prevailing rates in the same rating class. Thus, for example, if a company has an AAA rating and another company with an AAA rating has to pay 12 per cent to issue new bonds, then 12 per cent is the pre-tax cost of debt for the first company. Credit-rating agencies regularly publish updates of ratings of all rated companies. Therefore, it is possible to use these ratings to obtain the pre-tax cost of debt. The logic behind this method is that the market treats all bonds with similar ratings alike as far as fixing of the interest rate is concerned and therefore, if one AAA-rated company were to be paying 12 per cent, then all companies with the same rating would only pay 12 per cent (*if they borrow at the same point in time).*[11]

Pecking Order 4: Rate the Bonds Yourself

Not all companies get their instruments rated, however. In some countries, instruments with maturities less than a specified number of years need not obtain a rating. Further, no rating would be available if the company were to borrow from banks and financial institutions. In such situations, an analyst will have to rate the instrument.

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[11]Credit rating agencies rate the instrument and not the company. Some complications may arise due to this.

One can develop a credit-rating model using discriminant analysis. Alternatively, one can use the median-ratios of different rating classes to estimate the rating of a company. One can, for example, use the following Table 4.8[12] to find the tentative rating that S&P would give to a company.

TABLE 4.8
Median-ratios of some selected accounting ratios for different credit ratings

	AAA	AA	A	BBB	BB	B	CCC
Adjusted key industrial financial ratios US industiral long-term debt Three year (1998–2000) medians							
EBIT int. cov. (x)	21.4	10.1	6.1	3.7	2.1	0.8	0.1
EBITDA int. cov. (x)	26.5	12.9	9.1	5.8	3.4	1.8	1.3
Free oper. cash flow/total debt (%)	84.2	25.2	15	8.5	2.6	–3.2	–12.9
FFO/total debt (%)	128.8	55.4	43.2	30.8	18.8	7.8	1.6
Return on Capital (%)	34.9	21.7	19.4	13.6	11.6	6.6	1
Operating income/Sales (%)	27	22.1	18.6	15.4	15.9	11.9	11.9
Long-term debt/Capital (%)	13.3	28.2	33.9	42.5	57.2	69.7	68.8
Total debt/Capital (including STD) (%)	22.9	37.7	42.5	48.2	62.6	74.8	87.7
No of companies	8	29	136	218	273	281	22

Estimating the Cost of Equity

To estimate the cost of equity, analysts usually use the capital asset pricing model (CAPM), which states that the expected return of a stock is directly related to its systematic risk.

$$E(R_i) = R_f + \beta\, E(R_m) - R_f$$

where $E(R_i)$ is the expected return of the stock,
R_f is the risk-free rate of return,
Beta is a measure of systematic risk and is defined as:

$$\beta = \frac{\text{Covariance}(R_i, R_m)}{\text{Variance}(R_m)}$$

$E(R_m)$ is the expected return on the market portfolio.

[12]Can be downloaded from www2.standardandpoors.com/spf/pdf/fixedincome/corpcrit2003r.pdf

Estimation of Beta

The CAPM could be used to estimate the cost of equity for a listed firm. An unlisted firm, by definition, would not have stock market data. In such a situation, one can resort to the 'pure play' approach. Since the beta for the division is unobservable in the market place, a proxy beta derived from a publicly-traded firm whose operations are as same as possible to the division in question, is used as the measure of the division's systematic risk. The pure-play approach attempts to identify firms with publicly-traded securities, which are solely engaged in the same line of business as the division. These comparable firms are called pure-play firms. A firm should satisfy the following criteria to qualify as a pure-play firm:

- The firm should have only one business line and no miscellaneous revenue.
- The pure-play should be in the same industry or business line as the firm in question.
- The revenues of the pure-play should be roughly the same as those of the unlisted firm.
- When more than one firm can be identified as a potential pure-play, the firm with the median beta could be chosen as pure-play.

In addition, one must make sure that the private company and the pure-play companies are comparable in terms of the operating and financial leverage.

The levered betas of comparable companies are unlevered using the following relationship and used as proxy asset beta (unlevered beta) for the private company.

$$\beta_A = \beta_E E/V$$

where E is the market value of equity, V is the value of the firm, β_A and β_E are asset and equity beta, respectively.

This approach works well when one is valuing a private company with a single product line, but is difficult to implement if the firm is diversified. After all, there is no rule that private companies have to operate in a single line of business. In such a case, it might be difficult to identify pure-play companies. To illustrate, assume that we are valuing a private company that has interests in cement, textile garments and soda ash. If we want to use the pure-play approach, then we must identify companies that are in cement, textiles, soda ash and nothing else.

Not only that, if the private company obtains 50 per cent of its revenue from cement, then our pure-play company must also obtain approximately 50 per cent of its revenue from cement. The same rule applies for garments and soda ash as well.

An alternative method is available, which can help us in doing precisely what the pure-play approach does, but without having to identify pure-play companies. This method uses multiple regression to estimate the beta of a company. This method is based on the simple premise that the portfolio beta is just a weighted average of the betas of stocks comprising the portfolio.

$$\beta_{portfolio} = \sum_{i=1}^{n} w_i^* \beta_i$$

Here, there are 'n' stocks in the portfolio, and

$$w_i = \frac{MC_i}{\sum_{i=1}^{n} MC_i}$$

where MC is the market capitalization of the stock.

Thus, the beta of a company with interests in steel and real estate is the weighted average of the betas of the steel and real estate divisions. That is,

$$\beta_{company} = w_{steel} * \beta_{steel} + w_{real\_estate} * \beta_{real\_estate}$$

Suppose we have the beta estimates of 'm' number of companies. Assume that we also know their product lines. If we can find the Ws, we can estimate the betas of different segments by regressing the company beta on the Ws. Suppose the total number of divisions (or segments) that all the 'm' companies are 'n'. A meaningful regression is possible if we ensure that 'm' is far greater than 'n', that is, m>>n.

We have not yet discussed how to obtain the Ws in the above regression. These are the portfolio weights and they represent the percentage contribution of each division to the total market value of the company. Thus, for example, if the total market value of a company is US$ 100 million and the cement division is contributing US$ 50 million towards the market capitalization, then

$$w_{cement} = 0.5$$

But we do not know what is the market value of equity of the cement division. In fact, we may be doing this very exercise to find out the

market values of the different divisions in the first place. In practice, therefore, analysts use the total sales of the division rather than its market capitalization. Thus, for example, suppose the sales of the cement division and the total turnover of the company are US$ 40 million and US$ 80 million, respectively, then

$$w_{cement} = \frac{US\$\ 40\ million}{US\$\ 80\ million} = 0.5$$

We must resolve another issue before running the multiple regression.[13] Should we use unlevered betas as the dependent variable? Since we do not know the market leverage ratio of private companies, it makes more sense to run the regression using levered betas. Research studies show that in the multiple regression approach, it does not matter whether we lever or unlever the betas. We get very similar answers in both the cases. Therefore, we shall use levered betas directly as the dependent variable.

Now, we run the following multiple regression equation:

$$\beta_i = w_{i,1} * \beta_1 + w_{i,2} * \beta_2 + \cdots + w_{in} * \beta_n \ \ \forall_i$$

It is to be borne in mind that we are running a regression by forcing the intercept to equal zero. This adjustment is necessary. Otherwise, we will not be able to interpret the exact meaning of the intercept. We may be led to a silly conclusion that a company which does no business, has no sales and the like, but still has a positive (or negative) beta.

In the above regression equation,

β_i is the levered beta of the ith company,

$w_{i,k}$ is the percentage contribution of segment-K to company i,

β_k is the beta of segment K, K = 1, …, n

Not all companies would be manufacturing all the products. If a particular company is not manufacturing, say, steel and suppose, segment-2 stands for steel, then in our regression $W_{i,2}$ would be zero.

Most consultants do maintain beta-books that contain beta for individual segments like steel, food, healthcare and such others. The beta-book needs to be revised periodically as betas fluctuate over time.

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[13]See for example, Ehrhardt and Bhagwat (1991), and Wood et al. (1992).

Empirical research shows that portfolio beta is always more stable than individual stock beta. Therefore, it is better to use industry beta if there is a significant difference between individual stock beta and industry beta.[14]

Estimating Beta Using Accounting Variables

Some academicians observe that the beta of any company can be estimated on the basis of certain fundamental factors like dividend payout, asset growth, leverage, liquidity, asset size, earnings variability and the accounting beta. Since these values can be easily estimated for private companies, one can directly estimate the beta of private companies by using a simple OLS regression approach.

Should We Worry About Unsystematic Risk?

CAPM assumes that the market prices systematic risk alone because unsystematic risk can be diversified away by holding a portfolio of assets.[15] A risk-averse investor with a concave utility function would gain by diversifying away unsystematic risk. Therefore, it makes sense to assume that rational investors do bear systematic risk alone and hence expect compensation for bearing systematic risk.

However, private companies are owned by investors who do not hold well-diversified portfolios. The reason is that a substantial part of the total wealth of the owners of any private company is correlated with the value of the private company. The owners therefore bear both systematic and unsystematic risks. Cost of equity, as measured by the CAPM, therefore, underestimates the return expected by the shareholders of the company.[16]

[14]The weighted average of betas of stocks in the same industry group, say Pharma, is called industry beta; the weights are market capitalization (number of shares outstanding multiplied by market price) of individual companies.

[15]Estimation of the CAPM parameters is discussed in great detail in Damodaran (1994), Copeland et al. (1994), and Ehrhardt (1994).

[16]Fama and Jensen (1985), for example, observe that an undiversified owner will demand a higher risk premium before investing in risky assets.

If the private company is likely to go public or is expected to be taken over by a listed company, the shareholders of which are already holding well-diversified portfolios, then we do not need to worry about the premium for unsystematic risk. If we are valuing a private company on an as is basis, then we must add a premium for unsystematic risk as well.

Determination of Cash Flows

While valuing a private company, we need to keep certain facts in mind while also estimating the free cash flow. In particular, one has to provide for the following three factors if the private company is likely to go public.

Some top managers prefer to receive their remuneration in the form of dividends rather than salaries. This is done deliberately to artificially increase the net income reported by the company, especially before an IPO. Due care must be taken in forecasting the salaries of the company's management personnel.

Taxes

Private companies (particularly those in the nascent stages of their development) get some favourable tax treatment. However, they lose this favoured treatment once they go public. Therefore, the cash tax rate increases after the company goes public.

Other Expenses

Public companies are required to maintain a detailed record of their transactions for a certain number of years. They also need to make periodic disclosures of accounting information to the shareholders and the general public. A private company, in contrast, does not incur any of these expenses.

Concluding Comments

Theoretically, there is no difference between the valuation of a private and a listed company. In real life, however, one faces certain constraints, as some of the inputs required for valuation are usually not available for private companies. In this chapter, we discussed the different constraints that an analyst faces while valuing a private company, and the possible solutions to these problems.

The valuation of private companies is a difficult and often a subjective process because a private company has no stock (market) price to serve as a benchmark. Several multiples are in vogue.

The *price-earnings multiple* is the ratio of stock price and earnings per share for the most recent four quarters (or market capitalization and net income). For example, if a competitor has sold its business at a price that is five times the net income, then the same price-earnings multiple may be applied.

Likewise, the *price-to-sales multiple* is the ratio of stock price and sales per share or market capitalization and sales.

The *price-to-book value multiple* is the ratio of market capitalization to book value of shareholders' equity.

The *Enterprise Value to EBITDA multiple* is the ratio of EV (that is, market value of equity plus book value of debt) and Earnings Before Interest Tax Depreciation and Amortization. Applying this multiple yields *firm* value, not equity value.

It must be understood that it is not easy to either find comparable transactions or apply the 'right' multiple because of differences in risk, growth rate, capital structure, size and timing of cash flows between the comparable transaction and the company in question. Often, companies apply a discount to comparable public transactions to account for lack of marketability of private company shares. A recent study in the U.S. compared the valuation ratios paid for the private and public companies, and found that private companies are acquired at an average 20–30 per cent discount relative to similar public companies when using earnings multiple as the basis for valuing the transactions.[17]

Private company discount = 1–(Private company multiple/Public company multiple). One may look at similar transactions and infer a private company discount.

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Exercise

Mechanical Equipment Limited is in the process of acquiring Vishy Corp., a small, privately-held machine tools manufacturer. The pro forma projections for Vishy are presented in Exhibit 1.

Since Vishy is unlisted, stock market data is not available. So, the executives of Mechanical Equipment decided to examine comparable companies. The financial data for comparable companies is presented in Exhibit 2.

EXHIBIT 1 Pro forma projections for Vishy					
	US$ '000				
	2003	*2004*	*2005*	*2006*	*2007*
Net sales	**9,000**	**14,000**	**32,000**	**42,000**	**50,000**
COGS @ 37% of net sales					
SG&A @ 45% of net sales					
Current assets @ 32% of net sales					
Net fixed assets @ 2% of net sales					
Current ratio = 2.3					

EXHIBIT 2 Comparable company data							
US$ million							
	Company A				*Company B*		
	1999	*2000*	*2001*	*2002*	*1999*	*2000*	*2001*	*2002*
Sales	80	75	60	55	150	185	230	300
Debt	5	6	7	8	2.5	5	7	7
Equity	15	16	17	18	55	68	130	200
Beta (levered)				1.4				1.3
Market value				103				850

	Company C			
	1999	*2000*	*2001*	*2002*
Sales	18	18.5	18	19
Debt	0.5	0.6	0.6	0.7
Equity	3.0	2.4	2.5	3.5
Beta (levered)				1.1
Market value				70

Other data: Yield of 10-year treasury bonds = 7.5 %

Interest on debt = 10 %

Tax rate = 35%

The company has no debt.

Estimate:

1. Free cash flow.
2. Unlevered beta for comparable companies and Vishy Corp.
3. Levered beta for Vishy Corp.
4. Cost of equity for Vishy Corp.
5. How does your answer change when the beta is estimated as sales or market value weighted?
6. The value of the firm when:
   a) The company has no debt.
   b) The company borrows US$ 3, US$ 4, and US$ 5 million for three years starting from 2004 and remains at that level forever. Use capital cash flow valuation.

Assume that the company grows at 5 per cent in perpetuity after 2007.

5

Real Options Analysis in Mergers and Acquisitions

CHANDRASHEKAR KRISHNAMURTI AND VISHWANATH S.R.

CHAPTER OBJECTIVES

- Introduces real options analysis as an alternative to the DCF methodology
- Outlines the different types of real options
- Highlights the types of real options encountered in mergers and acquisitions

An option gives the holder the right, but not the obligation, to buy or sell a designated asset at a pre-determined price. A *call* option gives the holder the right to buy the underlying asset by a certain date for a certain price. A *put* option gives the holder the right to sell the underlying asset by a certain date for a certain price. The contract price is known as strike price or exercise price; the date in the contract is known as expiration date. *American* options can be exercised at any time up to maturity, while *European* options can be exercised only at maturity. Options can be further classified into financial and real options. When the underlying asset of the option contract is a stock, a stock index, a foreign currency, a debt instrument or a commodity, it is termed as a financial asset. The underlying asset in the case of a real option is a real asset.

Most companies implicitly hold real options. The example of a business that has the option to defer the investment is one type of real option. The first account of a real option is found in the writings of Aristotle.[1] Thales, a sophist philosopher, divined from some tea leaves that there would be a bountiful olive harvest during the following season. He bought the right to rent out olive presses from the owners of olive presses for a normal rent. When the bountiful harvest arrived, others did not have the pressing capacity. So, Thales rented out the presses to them at an above-market rate and pocketed a profit. What Thales had purchased is an option but not the obligation to rent out the presses. If the harvest were to be poor, he could have simply walked away losing just a small 'premium' in the process.

Real Options in Corporate Finance

The term 'real options' was coined by Professor Myers of MIT, in an article published in 1984. In his words:

> *Strategic planning needs finance. Present value calculations are needed as a check on strategic analysis and vice versa. However, standard discounted cash flow techniques will tend to understate the option value attached to growing profitable lines of business. Corporate finance theory requires extension to deal with real options.[2]*

Real options are widely prevalent in corporate finance. We discuss the identification and valuation of real options in this section. Subsequently, we focus on real options in M&A. We believe that a thorough understanding of the application of real options in corporate finance will facilitate our appreciation of the real options framework in M&A.

There are six categories of real options commonly used in corporate finance. They are:

- Timing option
- Growth option
- Abandonment option

[1]Copeland and Keenan (1998a).
[2]Stewart, M. 1984. 'Finance Theory and Financial Strategy', *Interfaces*, January–February.

- Option to expand scale
- Option to switch inputs and outputs
- Option to contract scale

The first step in real options analysis is to recognize them. Exhibit 5.1 presents a partial listing of real options by sector.

EXHIBIT 5.1 Typical real options by sector	
Aerospace	*Valuing options in customer contracts*
Banking and securities	Valuing real estate leases
Automotive	Decisions to modify new car designs
Chemicals	Timing of investment
Energy	Timing the development of oil and gas fields/switching inputs
Pharmaceuticals	Growth options embedded in R&D projects
Source: Copeland and Keenan (1998b).	

Timing Option

Capital projects are like call options in the sense that both involve the right but not the obligation to acquire an asset at a specified price on or before a certain date. The analogy between project characteristics and call option is given in Exhibit 5.2.

EXHIBIT 5.2 Project characteristics and option variables		
Project characteristics		*Call option*
Expenditure required for acquiring the asset	X	Exercise price
PV of cash flows	S	Stock price
Length-of-time decision may be deferred	T	Time to expiration
Riskiness of underlying operating assets	σ^2	Variance of returns from stock
Time value of money	r_f	Risk-free rate of return

The amount spent on the project is the exercise price. The present value of cash flows from the project is the stock price. The length of time the company can defer the investment decision without losing the

investment opportunity corresponds to time to maturity. The uncertainty in the project's cash flows corresponds to the standard deviation of returns. The cash flows lost due to competitors who have fully committed, corresponds to dividends.

The impact of an increase in each of options variables on the value of the option is shown in Exhibit 5.3. Like financial options, the value of the timing option can be found using the option value tables.[3]

EXHIBIT 5.3	
The impact of changes in option variables on the value of real option	
Variable	*Value of real option*
Increase in the PV of the project	Increase
A higher investment cost	Decrease
A longer time to maturity	Increase
Increase in uncertainty (volatility of cash flows)	Increase
Increase in risk-free rate	Increase
Increases in cash flow lost	Decrease

Recall that the NPV of a project = PV of cash flows – Initial Investment

$$= S - X$$

Timing options enable managers to defer investment for a certain period of time without losing the opportunity. In other words, managers would always want to spend later rather than sooner. If an investment can be deferred for one year, one could deposit the money in a bank for one year and withdraw it when the time is ripe to invest. That is, the proceeds of X would be available after one year. Since the money was deposited at r_f for one year, the present value of X discounted at r_f represents the amount to be deposited now.

$$PV\ (X) = X/(1 + r_f)^t$$

Since our objective is to refine NPV to incorporate other option variables like r_f, t and σ, let us redefine NPV as S–PV (X). As with financial options, this can be expressed as a ratio

[3]See any standard corporate finance text.

= S/PV (X)

and cumulative variance = $\sigma^2 t$ (cumulative volatility is the square root of cumulative variance).

We can use these two values to estimate the value of the option as percentage of the value of underlying assets. An illustration follows:

An oil company has an investment opportunity to develop some reserves. The PV of future cash flows is currently US$ 100 million. The firm can lock in the investment now by incurring an expenditure of US$ 80 million. Alternatively, it may wait for two years by paying an up-front fee of US$ 6 million and then make an investment of US$ 90 million to develop the reserves. Based on the volatility of the price of oil, the annual standard deviation of returns for the oil field is 35 per cent.[4] Interest rate is 8 per cent.

The value of the first alternative is US$ 20 million. That is, NPV = US$ 20 million.

The value of the second alternative is:

X = 90, S = 100
PV (exercise price) = $90/1.08^2$ = 77.16
Value of operating assets/PV (X) = 100/77.16 = 1.296
$\sigma (\sqrt{t})$ = 0.35 * $\sqrt{2}$ = 0.50

Look for the corresponding row and column from the option-pricing table. The option value is 31 per cent of asset value = 0.31 * 100 = US$ 31 million.

NPV = US$ 31 million–Fees = US$ 31 million–US$ 6 million = US$ 25 million.

The value of flexibility, therefore, is US$ 25 million–US$ 20 million = US$ 5 million. It obviously makes sense to wait and then invest.

Timing options are important in all natural resource extraction industries, real estate development, farming and paper products.

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[4]It is not correct to estimate the volatility of the cash flows from the oil project on the basis of volatility of oil *prices*. It can at best give a first-cut measure. Estimating volatility will be discussed later.

Growth Option

A growth option is characterized by an early investment (say, in R&D), which leads to a chain of inter-related projects opening up future new generation products and processes, access to new markets, oil reserves and so on. Any investment that creates new investment opportunities can be characterized as a growth option. Companies derive their value from two sources: assets-in-place and present value of growth opportunities. Stock markets realize it when pricing securities. The estimated values of growth option for some well-known American companies are presented in Exhibit 5.4.[5]

EXHIBIT 5.4			
Values of growth option reflected by stock prices			
Company	M.V. of equity (US$ million)	Estimated values of growth option (US$ million)[6]	Percentage of market values represented by growth option
Motorola	5,250	3,850–4,410	73–84
Apple Computer	2,000	1,340–1,604	67–80
Digital Equipment	5,690	3,790–4,550	67–80
IBM	72,890	36,457–51,030	50–70
Union Carbide	4,350	2,483–3,230	57–74
Goodyear	2,520	520–1,320	21–52
General Foods	2,280	167–1,012	7–44

As can be seen from Exhibit 5.4, up to 80 per cent of Apple Computer's market value in 1984 came from future growth opportunities.

Just as a package of bond and warrants is valued separately, the option component embedded in projects should be evaluated separately and then added to the value obtained from the DCF methodology. Assume that a project is expected to lead to a second-generation investment. The NPV of the entire proposal may be written as:

NPV = NPV (phase 1) + Call value of phase 2

Traditional NPV Analysis does not account for further expansion opportunities.

[5]See Kester (1984).
[6]Ranges of growth option values are estimated by subtracting the high and low values of capitalized earnings (at discount rates ranging from 15 to 25 per cent) from the market value of equity.

To evaluate the growth options embedded in the projects:

- Segregate discretionary expenditure and its associated cash flows pertaining to phase 2 project from phase 1.
- Find the NPV of phase 1 using the traditional DCF approach.
- Discount the discretionary spending to the present using an appropriate *risk-free rate*. If the discretionary spending that leads to phase 2 project is Y to be made in the third year, discount it to the present by using a three-year risk-free rate. This constitutes X.
- Find the present value of cash flows (net of inflows and *routine* expenditure on working capital and fixed assets) using WACC. This is S.
- Find S/PV (X).
- Estimate cumulative volatility ($\sigma\sqrt{t}$); t is three years in this case. Estimation of σ is discussed at a later stage.
- Find the value of the call option and add it to the NPV of phase 1.

Most capital investments are phased investments and phased investments are compound options. That is, an option on an option. When there are multiple stages in an expansion, each stage represents an option on the next stage, as given here.
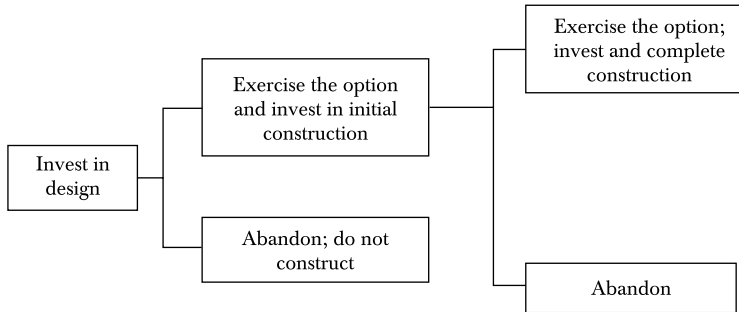
Hence, it is inappropriate to treat projects with multiple stages of expansion as simple call options. These are call options on call options or call options on put options, or put options on put options and so on. Since compound options are more complex, we do not discuss them here.[7]

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[7]Interested readers may refer to Rubinstein, M. 1992. 'Double Trouble', *RISK*, January.

Abandonment Option

If market conditions deteriorate severely, management can abandon operations and realize the resale value of project assets in second-hand markets. Abandonment options are important in capital-intensive industries, financial services and new-product introduction in uncertain markets.

In a competitive industry with overcapacity, management has to continuously consider whether to stay or get out. The actual decision depends on the value of the project below which the management may choose to abandon and the value above which extension could take place. Consider an example. A mining company is considering opening up a gold mine for two years. If gold prices go up, revenues would go up; whereas if gold prices go down, revenues would go down. The NPV analysis is based on the assumption that the company will continue digging even if revenues are down (thereby incurring a loss). The company might choose to abandon if gold prices happen to go down in both the years. The NPV calculation does not recognize this possibility.

Abandonment options exist in most businesses and are more valuable when uncertainty is high. An option to abandon is a *put* option. The value of the put option can be found by replicating the pay-off from the put option. It is possible to construct a portfolio consisting of a fraction of the project (Δ) and lending an amount B at the risk-free rate r that replicates the pay-off on the put.[8] Let the pay-offs from the project be $V_{1,1}$ and $V_{1,2}$, and those from the replicating portfolio be $P_{1,1}$ and $P_{1,2}$ in the two states of the world.

The pay-offs from the replicating portfolio are:

$$P_{1,1} = \Delta V_{1,1} + B(1+r)$$
$$P_{1,2} = \Delta V_{1,2} + B(1+r)$$

Solve for Δ and B.

---

[8] This is based on Sachdeva and Vandenberg (1993). Also, see Robichek and Van Horne (1967), Courtadon and Merrick (1983), Mason and Merton (1985), and Cox et al. (1979). Any standard text on options/derivatives would discuss the binomial model in great detail.

$$\Delta = \frac{(P_{1,1} - P_{1,2})}{(V_{1,1} - V_{1,2})}$$

$$B = \frac{P_{1,1} - \Delta V_{1,1}}{(1 + r)}$$

Since the pay-offs from the portfolio are identical to the pay-offs on the put, the current price of the put must be equal to the current value of the portfolio.

$$P_0 = (\Delta) (V_0) + B$$

Natural Resource Investments: A Special Case

Natural resource investments like mining and oil exploration are uniquely suited for real options analysis. The owner of a mine, for example, has the option to defer exploration, close or reopen, or even abandon a mine. The owner of the mine has the right to acquire the output of the mine (for example, copper) at a fixed exercise price (the variable cost of production). When output prices are low and the fixed costs of operating the mine are high, it might be prudent to shut down the mine, at least temporarily till output prices bounce back.

Assume that you have a two-year right to mine a copper deposit. The mine is known to have 8 million pounds of copper.[9] The development of the mine involves a cash outlay of US$ 1.25 million; and the development itself is expected to take one year at the end of which the owner can mine or subcontract the extraction to a third party by paying an extraction cost. Assume that the extraction costs are 85 cents per pound. The owner can then sell the output to another party at the spot price one year from now. The sequence of activities is shown in a time-line diagram here.

T_0 — Acquire mining rights

T_1 — Subcontract extraction / Sell the output at the spot price

T_2
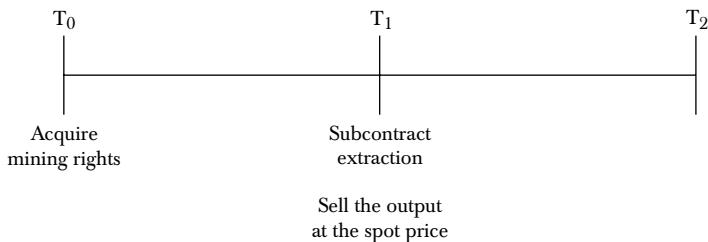
[9]This example is based on an unpublished note by Prof Campbell Harvey, Duke University.

Percentage changes of copper price follow a normal distribution with a mean of 7 per cent and a standard deviation of 20 per cent. Current price of copper is 95 cents per pound. The required rate of return for the project is 10 per cent and the risk-free rate is 5 per cent.

$$\text{The NPV of the project } = -1.25 + \frac{8[E\,(S_1) - 0.85]}{1.1}$$

where $E\,(S_1)$ = expected spot price of copper one year from now.
The expected spot price $E\,(S_1) = S_0\,e^{\mu T} = 0.95\,e^{0.07} = 1.0189$

NPV = –0.022. This analysis ignores the fact that the owner can abandon the project after the development if the spot price is less than 85 cents. This is a one-year call option on copper with a strike price of 85 cents. The value of the call option can be estimated as:

Value of call = $S_0\,N\,(d_1) - K\,e^{-rt}\,N\,(d_2) = 0.95\,N\,(d_1) - 0.85\,e^{-0.05}\,N\,(d_2)$
where

$$d_1 = \frac{\ln\,(S_0/K) + r_f + \sigma^2/2}{\sigma\sqrt{t}}$$

$$= \frac{\ln(0.95/0.85) + 0.05 + .02}{0.20} = 0.906$$

$$d_2 = d_1 - \sigma\,\sqrt{t} = 0.706$$

Call option value = 0.162
The 'true' NPV = –1.25 + (8) (0.162) = 0.046 million or US\$ 46,000.

In many natural resource investments like oil exploration, there are two sources of uncertainty–the quantity of oil in the ground and the price of oil. Options that derive their values from two or more sources of uncertainty are called rainbow options. Using the simple option-pricing model to value such options can lead to biased estimates of value.

Other Options

If price or demand changes, management can change the output mix of the facility. Such options are termed option to switch (output). These are important in those cases where the good is sought in batches or is subject to uncertain demand. Examples are consumer electronics, toys, and specialty-paper. Likewise, management may have the option to switch inputs as in the case of oil, electric power and agricultural crops.

In the case of power projects, for example, management can choose the technology in such a way that the flexibility to switch between alternate fuels is retained. This flexibility though comes at a price, and can be advantageous depending on the relative prices of fuels and their volatility. Management can switch to the cheaper alternative when the situation warrants.

Estimating Volatility

One of the inputs to the option-pricing model is the variance of returns. In the case of equity options, the standard deviation of stock returns in the immediate past (say, six months or three months) is used to estimate the value of volatility. Another approach is to estimate the volatility 'implied' by past option prices. That is, given all parameters and the option price, one may find out volatility by a process of trial and error. In the case of real options, the underlying asset is the project. How should volatility be estimated, since the project's returns are unobservable? There are several alternatives:

(a) Estimate the volatility of a stock market index and take it as proxy for the volatility of project returns. Companies can have higher or lower volatility than a broad-based index. Further, cash flows from projects within companies are probably more volatile. What is more, volatility of an index gives the value of volatility of *equity prices*. What we need is the volatility of project returns. In sum, the volatility of a stock market index is only a rough estimate.

(b) Calculate the implied volatility of the options on the company's stock and take it as proxy for the project's variance.

(c) Use spreadsheets (or sophisticated packages like Crystal Ball) to simulate the project's cash flows and estimate the standard deviation of the project's returns.

Managing Real Options

The value of the real option depends on the underlying variables like present value of operating cash inflows, outflows, time to maturity, volatility of cash flows, risk-free rate of interest and cash flow lost due to competition. The value of the option can be (and should be) managed

by increasing the present value of cash inflows, decreasing the PV of cash outflows, increasing the uncertainty in cash flows, extending the opportunity's duration and reducing the value lost by waiting to exercise. One may reduce the value lost by waiting, for example, by erecting entry barriers to competitors (for example, locking in key customers). Likewise, the present value of cash inflows can be increased by raising prices or reducing expenses.[10] As mentioned earlier, the value of an option can be expressed as a function of two metrics S/PV (X) and $\sigma \sqrt{t}$. The value of the option increases if either (or both) increases. A company may classify projects on an option space, as shown here:[11]

S/PV (X)

	Invest now	May be later or now
1.0		
	Never invest	Probably never/May be later
0.0		

$\sigma \sqrt{t}$ →
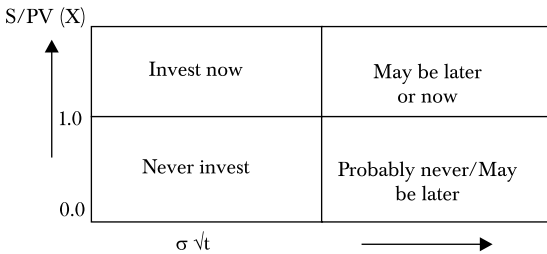
Those projects that have low volatility but high S/PV (X) should be exercised immediately. That is, the company must invest immediately. Those projects that have low volatility *and* low value-to-cost ratio should never be exercised. Those projects with moderately high volatility and value-to-cost ratio may be harvested now; and those with negative NPV, positive value-to-cost ratio and moderately high volatility may be exercised at a later date when conditions improve. In sum, a manager is required to proactively cultivate a company's projects. Proactive cultivation needs constant monitoring and support to promising projects. Assume that a company has a portfolio of projects of which some have negative NPV. Conventional capital budgeting suggests that they should be discarded. That is incorrect. The principal insight gained from real options analysis is that these projects should be actively cultivated if they have high cumulative volatility.

[10] It might not be possible to increase prices unless the product has unique features. To add unique features one may have to invest in capital equipment, marketing and so on. This raises X. That is, altering one variable may have an impact on others. So one should ascertain the *net* impact on the option value.
[11] See Luehrman (1998a, 1998b).

Applications of Real Options in Mergers and Acquisitions

Real options framework is invaluable in the analysis of mergers and acquisitions. It can be gainfully employed in all the phases of M&A, such as strategic planning, deal design and post-merger integration.

Real Options in Strategic Planning

When managers discuss M&A plans from a strategic perspective, they tend to use terms such as 'rights', 'flexibility' and 'commitments'. These are veiled terms denoting optionality. Some acquisitions tend to create flexibility, while others destroy them. Flexibility is an option and should be treated as such in financial analysis. Flexible investments can be altered as conditions change. Examples of flexibility in options include the holding of excess cash, inventory or manufacturing capacity.

Some M&A involve strategic actions that can hedge a firm's exposure to risk. Insurance works like a put option and should be included as such in analysis.

Several strategic acquisitions are motivated by the creation of strategic competencies. Gaining more know-how creates strategic competencies and engenders a more flexible work force. This flexibility constitutes a valuable real option.

Several multinational firms value learning about an unfamiliar market before taking the plunge. Some acquirers obtain first-hand knowledge about the firm by acquiring an interest in the firm and taking a board seat before completing the full acquisition. Anheuser–Busch followed this strategy in overseas acquisitions.

The platform acquisition strategy involves a series of acquisitions that allows a firm to learn about the business as it grows. This is a staged investing process that permits the buyer to decide at each stage whether to expand or not.

The much-touted 'first-mover advantage' and 'winner takes all' approaches have given way to a more sober 'second-mover' approach in recent years. This perspective has the advantage of watching someone else make the arduous market discovery and then make a quick move to follow and eventually gain leadership. Excel followed Lotus and Visicalc, but eventually gained market leadership.

Some M&A deals involve rights to exploit an uncertain resource. This is especially important with respect to natural resources, talent and intellectual property. Weatherford and Bodily (1988), and Bruner (1988), for example, value the right to drill in a natural gas field using real-option techniques. Real-option theory can offer a useful framework for identifying attractive targets that are undervalued as well. Rappaport and Mauboussin (2002) follow this approach in determining buy and sell strategies.

Real Options in Deal Design

Real options are rampant in deal design. The formal contract in many instances is structured as a contingent right. If the terms and conditions are satisfied, then the buyer is allowed to acquire the target. In many cases, a buyer typically approaches the target shareholders with an offer to buy the shares at a stated price within a stipulated period. The buyer has effectively granted a put option to the target shareholders.

Many M&A deals include topping fees and penalties for not completing the deal. These are rights to payments in the event of non-performance by one party or another. Since these are contingent payments, they are like options.

The ability to sell an asset on demand is like a put option. Control works like holding a call option on future strategy.

Mergers and acquisitions sometimes involve the use of contingent payments such as earnouts. These contingent payments are call options on future performance.

Both buyers and sellers face transaction risks in concluding M&A transactions. This risk can be mitigated by the use of caps, collars, floors and contingent value rights.

Takeover defenses such as poison pills, lock-ups and control rights are options.

Liquidity as an Option

Liquidity and control are rights and their values must be estimated in terms of their option values. Liquidity discounts have been modelled using option-pricing theory. Alli and Thompson (1991) compute the value of liquidity as the value of a put option with a strike price equal to the

share price at the date of the issue. Longstaff (1995) estimates the upper and lower bounds of the value of liquidity as the price of a look-back option. A subset of his results is reproduced in Exhibit 5.5.

EXHIBIT 5.5 **Upper bounds for percentage discounts due to lack of marketability (percentage discounts from marketable values)**			
Marketability restriction period	*Volatility = 10%*	*Volatility = 20%*	*Volatility = 30%*
180 days	5.768	11.793	18.082
1 year	8.232	16.984	26.276
2 years	11.793	24.643	38.605
3 years	19.128	40.979	65.772
Source: Longstaff (1995).			

It is seen that the discount due to illiquidity is driven by two major factors: uncertainty and time. The greater the uncertainty in the value of the underlying stock, the greater will be the discount for illiquidity. Furthermore, the longer the delay in exiting from an investment, the greater will be the discount for illiquidity.

Finnerty (2002) applies this option-based view to a cross-section of letter stock discounts. He found that the discount was predominantly determined by volatility, the length of the restriction period, the riskless rate and the stock's dividend yield. Furthermore, he documents the finding that dividend payments tend to moderate the size and variability of the discount. When he used the options-based model to assess the actual discounts, he found that it performed well for volatility values in the range of 30–70 per cent.

Control as an Option

Control is a call option on the alternate strategies and policies of the firm. Control bestows the right to direct the strategies and activities of the firm. Furthermore, the right to allocate resources and to distribute the economic wealth of the firm also ensues from control. We should emphasize the two key characteristics of control which have option-like features: contingency and volatility. The value of control is contingent on the success of current strategies. If current strategy works well, the

option to switch strategies is out of the money. If existing strategy works inadequately, then the option to switch strategies is in the money. Furthermore, the value of control depends on the volatility of the values of the firm under current and alternate strategies. The value of control also depends on the uncertainty of those values. Control will be worth more in situations of greater uncertainty.

Thus, 'control premium' that is frequently mentioned in M&A transactions is the price of the control right. This term is not to be confused with 'purchase premium'. This is because purchase premium incorporates the values of both control and the expected synergies. In situations where one shareholder has controlling power and the others do not, the value of the dominant shareholder's equity interest will reflect the control premium. Accordingly, the value of minority shareholders will suffer a discount.

A naïve view of controlling power is the ability to command at least 50.1 per cent of the votes. But in most cases, no single owner holds more than 50 per cent of the shares. This is because most ownership is widely dispersed in most listed firms. Thus, effective control may be achieved with as little as 20 per cent of the shares. Another view of controlling power holds that voting power is contingent, that is, votes are relevant only in the context of some game. Lloyd Shapley came up with an insightful breakthrough in developing the process for computing the *Shapley value*. The Shapley value is the ratio of the number of combinations of voting groups in which a given investor 'j' is pivotal to the outcome, divided by the number of all possible combinations. The pivotal shareholder decides the outcome of a voting contest. Quite clearly, the larger the shareholding of investor 'j', the more powerful is investor 'j', due to the larger Shapley value. Thus, we can see that the controlling power arises from holding relative rather than absolute power in most cases.

Consider the case when two competing raiders are seeking proxies for a takeover target. The power of the mass of atomistic shareholders depends on the relative power of the two powerful raiders. Exhibit 5.6 presents the Shapley values for the mass of atomistic shareholders for a range of scenarios. It is seen that atomistic shareholders are generally powerful in the absence of the relatively more powerful voting blocks. As the two proxy contestants gain more votes, the power of atomistic shareholders declines. In general, it is true that the power of atomistic

shareholders increases as their collective votes increase. An exception is found in the south-east corner of the table where even with modest holdings, the atomistic shareholders are quite powerful.

EXHIBIT 5.6 **Sensitivity analysis of Shapley values of atomistic shareholders in a hypothetical proxy contest**				
Votes of control shareholder #2	*Votes of control shareholder #1*			
	10%	20%	30%	49%
10%	0.78	0.65	0.50	0.05
20%	0.65	0.56	0.48	0.06
30%	0.50	0.48	0.50	0.09
49%	0.05	0.06	0.09	0.50

There are two divergent views regarding the potential beneficiaries of control. One school holds that control is valuable because it presents an opportunity for the majority to expropriate the wealth of the minority. The other school posits that control confers the option to direct the strategy of the firm in ways that benefit all shareholders. We elaborate on these two views here.

The phenomenon in which controlling shareholders expropriate the wealth of minority shareholders is called 'tunnelling'. Empirical evidence on 'the private benefits' school of thought is provided by Dyck and Zingales (2001). They examined a large sample of M&A transactions from 39 countries and found that the premium paid for control is higher in countries that protect their investors less and facilitates extraction of private benefits. A recent and emerging body of research confirms that cross-shareholding arrangements and pyramiding are widely prevalent in countries with poor protection for minority shareholders. Bebchuk et al. (1998) show that for a relatively small investment in a pyramidal firm, the controlling shareholder gains control rights that are disproportionately greater than the cash flow rights. Marco and Mengoli (2001) find that pyramidal firms in Italy are associated with wealth transfers to controllers. The recipients of wealth transfers reported significantly positive CARs (cumulative abnormal returns), while the minority shareholders faced losses. Similar evidence regarding expropriation is found in Korea and India.

The alternate view of the benefits of controllership posits that control confers the rights of steering the firm strategically in the right direction. Magrabe (1978) has explored the valuation effects of switching options in industrial settings. Myers (1984) and Kester (1984) examined the value of rights in resource allocation decisions. Celebrated investors such as Warren Buffet and T. Boone Pickens have been able to use their enormous clout in redirecting firm strategies in ways that enrich all shareholders, including the minority. A recent example of an activist-investor influencing strategic behaviour is the case of Carl Icahn's 6.6 per cent stake in the Korean tobacco and ginseng company KT&G. Using his clout, Icahn has urged the top management at KT&G to divest their real estate assets, spin off their ginseng unit and to pay more dividends.

Research on the premium commanded by dual-class shares quantifies the value of control. Dual-class share structures are a common form of anti-takeover defense employed by a founding family with a large shareholder base. Exhibit 5.7 indicates the value of the control premium when firms have dual-class structures. Dual-class shares are widely prevalent in countries such as Sweden, Italy and Israel. Hauser and Lauterbach (2000) found that reversions of dual-class firms back to 'one-share one-vote' structures were associated with positive excess returns. Bruner (1999) documents that in the case of Renault's attempted takeover of Volvo, Volvo's voting premium fell from 46.6 per cent to 2.3 per cent when Renault acquired a significant block of Volvo's stock.

EXHIBIT 5.7
Control premiums of senior voting shares over junior voting shares in dual-class share structures

Study	Country	Average premium (%)
Rydqvist (1996)	Sweden	12.0
DeAngelo and DeAngelo (1985)	United States	5.0
Doidge (2003)	Foreign firms cross-listed in the US	8.0
Biger (1991)	Israel	74.0
Megginson (1990)	United Kingdom	13.3
Smith and Amoako-Adu (1995)	Canada	10.4
Zingales (1994)	Italy	80.0
Kunz and Angel (1996)	Switzerland	18.0

Option-like Contingent Payments in M&A

Contingent payments frequently occur in many M&A transactions and take several forms. Some of these are listed here and described in the following paragraph:

- Earnout plans
- Targeted stocks
- Stock options
- Bonus payments
- Escrow funds
- Hold-back allowance
    - *Earnout plans*: In an earnout plan, the trigger on payment may be determined by complicated formulas and agreements for measuring progress. The earnout plan is usually a legally binding contract.
    - *Targeted stocks*: The buyer can issue the target's shareholders shares of stock whose dividends are pegged to the performance of the target. Esty (2001) contends that the targeted stock creates value by facilitating acquisitions.
    - *Stock options*: These are rights to acquire shares of the buyer. The exercise price is normally set above the buyer's stock price at closing.
    - *Bonus payments*: Bonus payments are made to sellers, especially managers of the selling firms if they agree to stay on with the target firm.
    - *Escrow funds*: In some transactions, a part of the total payment is set aside in an escrow account, to be released to the seller on satisfactory completion of some stipulated condition.
    - *Hold-back allowance*: This is similar to escrow funds, with the exception that no escrow account is created.

For ease of exposition, we will refer to all the contingent payments listed above as earnouts. Earnouts perform a very vital economic function–they resolve disagreement about the future and create incentives for the target company management.

Potential Benefits of Earnouts

There are three major advantages of using earnouts in an M&A transaction.

1. The most commonly mentioned rationale for employing an earnout is to bridge the valuation gap. Let us assume that a seller is optimistic and values the target firm at US$ 60 million. The buyer is somewhat pessimistic and values the deal at US$ 40 million. No deal is possible with this gap in valuation. Now, both parties can agree to an immediate payment of US$ 40 million and a US$ 20 million contingent payout if certain performance targets are achieved. Thus, earnouts serve to bridge the valuation gap as also serve to expedite closure of an M&A transaction.
2. Earnouts serve to facilitate retention of key managers with the combined firm. If a portion of the purchase price is contingent on performance goals after the closure of the sale, the target firm managers have an incentive to remain with the firm in order to participate in potential future payments.
3. Earnouts also motivate the target managers and shareholders to continue with aggressive growth strategies even after closing the sale.

Despite the substantial theoretical benefits of earnouts described earlier, earnouts are not that common. Exhibit 5.8 summarizes the trends in volume and the number of deals employing earnouts. Earnouts are employed in only between 0.4 per cent and 2.5 per cent of all deals conducted during the 1985–2002 period in the US. Over the years, the absolute volume of the deals utilizing earnouts has risen. During periods of robust M&A activity, the volume of deals making use of earnouts rises, and tends to fall as the M&A activity ebbs. In deals employing earnouts, they account for a substantial portion of the deal consideration Earnouts account for between 19 and 88 per cent of the total consideration paid.

Kohers and Ang (2000) conducted a comprehensive study of 938 acquisitions in the United States, which used earnouts. Their research covered the 1984–96 period. They conclude that earnouts have two major advantages. First, they help to manage buyer's risk. Second, earnouts aid in retaining management. Some of their principal findings are summarized next in the form of snippets:

| | **EXHIBIT 5.8** | | | | |
| | **Occurrences of earnouts by year in the US** | | | | |
Year	*Earnout deals Total value (US$ million)*	*All deals (%)*	*Number*	*All deals (%)*	*Payment due to earnout (%)*
1985	447.4	0.4	8	1.3	51
1986	2,081.6	0.9	15	1.2	26
1987	1,697.3	0.9	15	1.1	44
1988	1,795.3	0.7	26	1.5	54
1989	2,774.9	0.9	52	2.4	24
1990	1,438.5	0.8	53	2.6	21
1991	2,254.4	1.8	55	2.8	30
1992	1,272.6	1.1	61	2.7	40
1993	4,332.0	2.5	89	3.4	21
1994	1,990.1	0.7	92	2.7	88
1995	7,150.4	1.8	86	2.3	27
1996	8,831.7	1.5	85	2.0	19
1997	11,711.1	1.7	144	3.1	29
1998	9,845.1	0.8	167	3.5	28
1999	13,562.4	0.9	163	1.7	21
2000	26,028.3	1.6	174	1.9	23
2001	15,644.7	2.2	151	2.4	27
2002	8,089.3	2.1	150	2.6	29

- Earnouts are predominantly employed in two kinds of deal situations: privately-held targets and divestitures of corporate subsidiaries.
- Small buyers are more likely to utilize earnouts. Also, buyers from common law countries are more likely to make use of earnouts than those from civil law countries.
- Earnouts are typically more likely when the buyer and the seller are from different industries.
- In about two-thirds of the deals with earnouts, target managers continued with the firm. Furthermore, the retention of management was highly correlated with the size of the earnout period.
- The size of the earnout component averaged about 45 per cent in private transactions as compared to 33 per cent in divested subsidiaries.
- Acquisition premiums were larger in the case of deals with earnouts than in straight cash or stock offers. Once again, the premium was higher for private targets than for divested subsidiaries.

- The market viewed earnouts positively as evidenced by positive abnormal returns (1.4 per cent) on announcement as compared to other comparable transactions.
- The average horizon of earnout payment is between two and five years. Earnouts are mostly structured based on the profits of the target firm.
- Target firms are likely to be organized as subsidiaries during the earnout period.
- In almost 90 per cent of the cases, some payment was made under the earnout arrangement. In about 50 per cent of the cases, full payment was made.

Several notable acquisition deals included earnouts as part of the consideration. Seagate included an earnout deal in its acquisition of Quinta Corporation in 1998. Seagate paid US$ 230 million at closing and included a contingent payment of an additional US$ 95 million over the next three years, subject to Quinta meeting some technological milestones. In December 1996, Unocal sold its subsidiary, 76 Products Company to Tosco Corporation in a deal involving US$ 2.05 billion in cash, common stock and an earnout.

Despite the professed advantages of employing earnouts in acquisition deals, their relative infrequency needs to be addressed. We offer some potential explanations based on the perceived disadvantages of earnouts.

1. Complexity of definition: Effective earnout formulas are difficult to build. Objective numerical definitions can at times become too complex for all parties to effectively comprehend.
2. Excessively aggressive performance goals: In order to maximize its valuation, the target firm's management may state overly aggressive goals. If it appears likely that the target would miss the performance goals, then it is likely to demotivate the target firm employees.
3. Post-acquisition integration: Earnouts are likely to be least effective if the target firm is fully integrated. This would be the case, if the main goal of acquisition is synergy. It is then difficult to segregate the performance of the target from the rest of the firm.
4. Managerial ownership of earnouts: If the target managers do not receive a sizeable chunk of the earnout claim, then they are unlikely to be motivated to achieve high levels of future performance.

Given some of these practical difficulties, several buyers would choose not to employ them.

Structuring and Valuing Earnouts

Earnout provisions are call options on the future performance of the firm. They are more complicated than financial options because they are not standardized and not exchange-traded. However, an options framework is likely to be most useful in understanding the implications of using an earnout and for structuring and valuing it as well. Earnouts are likely to be valuable even if they are out of the money now. Valuation of an earnout depends on how likely the option will become in the money, sometime during its remaining life. Earnouts are costly to the buyer and are not at all free. It is not a costless bauble given away to appease the seller. Earnouts are especially appropriate under conditions of great uncertainty regarding the value of the underlying asset. It is especially useful in settings involving high technology, rapid growth and in turbulent economic environments. Earnouts are highly appropriate when the buyer and the seller exhibit highly divergent outlooks. Earnouts will be helpful in bridging the differences in outlook between an optimistic seller and a pessimistic buyer.

The key elements to consider while structuring an earnout are earnout amount, earnout period, performance goals, payment schedule and operational integration. We discuss each one of these elements here:

Earnout Amount

In any acquisition deal with an earnout, both parties must agree to the portion of the deal amount to be paid at closure and the portion that will be subject to earnout. The earnout percentage is usually a function of the negotiation 'price gap'. Ideally, both parties should strike a proper balance between the payments at closing and the amount at the earnout. The proper balance depends on the strength of the target's position, the total risk in the earnout, and the parties' objectives. If the earnout ratio is too small, there may be little incentive effect. On the other hand, if the earnout percentage is too large, the target may be subjecting itself to too much risk. In reality, most earnouts are structured in the range of 20–70 per cent of the total purchase price.

Earnout Period

Typically, most earnouts last between one and five years, the average being three years. The earnout period is mostly determined by the earnout ratio—the larger the earnout ratio, the longer the earnout period. What are the incentives of the seller and the buyer in setting the optimal earnout period? Contrary to the discounted cash flow view, the option view dictates that the seller should desire a longer earnout period; since longer the time to maturity, the more valuable is the option. Thus, the buyer should be wanting shorter earnout periods.

Performance Goals

In order that earnout plans are effective, payments should be based on clearly defined, mutually understandable, attainable and easily measurable performance goals. The common performance criteria in vogue include *Revenues, Gross margin, Pre-tax profit, Cash flow, EBITDA, or Non-financial milestones*. Before selecting the most appropriate measure to use, one must consider the pros and cons of the various performance goals in vogue. Sometimes, more than one performance criteria are incorporated into the earnout formula. A mathematical formula must be built, which determines the exact amount of cash or shares to be distributed to the target's shareholders.

Payment Schedule

There are various ways to structure the payment schedule of an earnout. In order to balance risk and reward, the earnout should provide significant rewards for partial fulfilment of the performance targets. In some instances, the target may exceed the performance goal. In such cases, additional bonuses may be awarded. Alternately, the target may be allowed to use any excess performance in a given year to offset any periods in which it fails to attain the goals. In some cases, buyers may cap the total payment in an earnout. In such instances, it makes sense for targets to demand a minimum payment.

Real Options in Post-Merger Integration

Operational Integration

The target and the buyer should make it clear at the beginning whether the target's operations will be integrated with the buyer's operations;

and if so, would the revenues from the other divisions be included in the computation of performance goals for the earnout. Also, it needs to be clarified if the target will have operational control in order to fully achieve its goals. Ideally, the earnout must be structured in such a way that the strategic as well as the financial objectives of the acquisition are met.

Other Issues

The earnout agreement should specify the accounting policies to be followed in measuring the target's performance. Either the buyer should provide the target with funds to ensure that the target will meet the performance goals or provide the target with authority to procure the funds from external sources. Both parties should agree on how the target will conduct the business after the closing. The earnout should also specify the risk faced by the seller in the advent of a change in control of the buyer. Some earnout agreements contain provisions that permit the earnout instrument to be sold, assigned or transferred. These additional features impart liquidity to the earnout instrument and enhance its value. Earnouts are usually disclosed in footnotes of financial statements like other contingent liabilities. It is possible that earnouts increase the financial leverage of the buyer and should be taken into account for assessing the debt rating and creditworthiness of the buyer.

Besides being useful in deal design, the real options framework is also suitable for risk management in M&A (particularly collars such as contingent value rights are frequently used). Real options also find a place in takeover defense and attack.

Concluding Comments

In this chapter, we have surveyed the use of real options in mergers and acquisitions. Real options may lurk in unexpected corners in any takeover deal where flexibility is being granted or taken away. The right approach of the decision-maker in such cases is to value flexibility and use it in negotiations. Clearly, the 'discounted cash flow' approach in itself is insufficient and therefore, the options framework is a valuable tool-kit not only for analysts but also for the decision-makers in the top management of the firm.

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Exercises

1. Given the following values, calculate the value of the call option. Use the option-pricing table from a standard corporate finance text like the one by Brealy and Myers.

    S = US$ 3 million
    X = US$ 3.5 million
    r = 5 per cent
    T = 5 years
    Volatility = 35 per cent p.a.

2. The cash flows from an acquisition are given here.

	US$ million						
Year	0	1	2	3	4	5	6
Cash flow	(125)	9.0	10.0	11.0	11.6	12.1	12.7
Terminal value							191.0

The acquisition is expected to lead to a second-generation project whose cash flows are given here.

	US$ million						
Year	0	1	2	3	4	5	6
Cash flow				(382)	23.1	25.4	28.0
Terminal value							419.3

The cost of capital is 12 per cent. Risk-free rate is 5 per cent. Calculate NPV of the acquisition. Is the acquisition worthwhile? Estimate the value of the second-stage project as an option, assuming annual volatility of 40 per cent. What is the true NPV of the acquisition?

3. A company is in the process of acquiring another company.[12] The forecast of free cash flows are prepared on the basis of the following assumptions:

- Current sales are US$ 50 million.
- Expected growth rate in sales is 6 per cent for the next 10 years.
- Cost of goods sold is 65 per cent of sales.
- Selling, general and administrative expenses are 15 per cent of sales.
- Depreciation is 4 per cent of sales.
- Capital investment to support sales is 8 per cent of sales.
- Tax rate is 35 per cent.
- WACC for the company is 9.5 per cent.
- The book value of the company's debt is US$ 10 million.

The target has an excellent distribution system that has value to the acquirer. The acquirer plans to set up a new plant if the acquisition goes

[12] This is based on Diane, L. 2000. 'Do Foregone Earnings Matter When Modeling and Valuing Real Options?: A Black-Scholes Teaching Exercise', *Journal of Financial Practice and Education*, Fall/Winter.

through. The new plant requires an initial investment of US$ 6 million in year 'zero' and US$ 8 million one year later. If plant construction is delayed, construction costs are expected to increase by 10 per cent per annum. Sales are expected to increase to 11 per cent per annum from 5 per cent, one year after the investment is made. Due to increased efficiency, cost of goods sold will decrease from 65 per cent to 60 per cent of sales. S, G&A, depreciation and capital investment remain the same. Capital expenditure required to maintain only the plant will equal depreciation expense of the plant. The new plant has the same risk profile as the firm itself.

The managers of the company have decided to wait for three years before building the plant. In other words, the managers have a three-year real option starting three years from now. The standard deviation of project returns and risk-free rate are 45 per cent and 5 per cent, respectively.

- Estimate the value of the target company's equity without the new plant.
- Estimate the value of the real option, assuming that the managers defer the construction of the plant for three, four and five years.

6
Design of Consideration in Acquisitions: Cash and Stock Offers

Vishwanath S.R. and Chandrashekar Krishnamurti

CHAPTER OBJECTIVES

- Highlights the importance of choice of method of payment in acquisitions
- Provides a framework for choosing between cash and stock payment
- Highlights the impact of method of payment on financial performance
- Suggests a methodology for estimation of exchange ratio

The acquirer can pay the target company in cash or exchange shares in consideration. 45.6 per cent of 4,256 deals done in the US between 1973 and 1998 were paid in cash. The percentage of stock deals is increasing. Exhibit 6.1 presents the characteristics and descriptive statistics by decade.

The analysis of acquisition for shares as opposed to acquisition for cash is slightly different. The steps involved in the analysis are:

- Estimate the value of acquirer's (self) equity.
- Estimate the value of target company equity.
- Calculate the maximum number of shares that can be exchanged with the target company's shares.
- Conduct the analysis for pessimistic and optimistic scenarios.

		EXHIBIT 6.1		
		Characteristics and descriptive statistics by decade, 1973–98		
	1973–79	*1980–89*	*1990–98*	*1973–98*
N	789	1,427	2,040	4,256
All cash %	38.3	45.3	27.4	35.4
All stock %	37.0	32.9	57.8	45.6
Any stock %	45.1	45.6	70.9	57.6

Source: Andrade et al. (2001).

		Break-up according to the method of payment, by year					
Year	*Total*	*Cash payment*		*Mixed payment*		*Stock payment*	
		N	*Per cent of total*	*N*	*Per cent of total*	*N*	*Per cent of total*
1985	52	26	50	8	15	18	35
1986	65	43	66	7	11	15	23
1987	49	27	55	3	6	19	39
1988	61	45	74	7	11	9	15
1997	118	39	33	9	8	70	59
Total	859	342	40	90	10	427	50

Source: Heron and Lie (2002).

Exchange ratio is the number of acquiring firm's shares exchanged for each share of the selling firm's stock. Suppose Company A is trying to acquire Company B's 100,000 shares at US$ 230. So, the cost of acquisition is US$ 23,000,000. Company A has estimated its value at US$ 200 per share. To get one share of Company B, A has to exchange (230/200 =) 1.15 share or 115,000 shares for 100,000 shares of B.

Assume that the acquiring Company (B) has 115 million shares, whereas the target Company (A) has 175 million shares. The exchange ratio is 0.6. The relative ownership of the two firms after the merger is shown below.

	Shares outstanding		*Shares in the merged company*	
	Million	*Exchange ratio*	*Million*	*%*
A	175	0.6	105	47
B	115	1.0	115	53

The shareholders of the acquiring company, by design, get one share in the newly-formed company for every share held in the original company. The shareholders of the target company exchange their shares

for a specified number of the newly-formed company's shares. This ratio is called exchange ratio. It is 0.6 in the earlier example. Target company shareholders usually receive an acquisition premium. That is, their shares are purchased at a premium to the pre-announcement price. The acquiring company can afford to pay a premium because the acquisition is expected to create synergistic benefits in terms of cost savings and revenue enhancements. The shareholders of the two companies share synergy in some proportion.

In the example given earlier, assume that the pre-announcement prices of the two companies (acquirer and target) are US$ 13 and US$ 23, respectively. The market capitalizations of the two companies are:

	No of shares (million)	Price (US$)	Market capitalization (US$ million)
A	175	13	2,275
B	115	23	2,645
			4,920

The market capitalization after the merger is more than the sum of stand-alone market values of the merging companies due to synergy. The market capitalization in the given example is US$ 5,420 million, assuming a synergy of US$ 500 million. The share price of the two companies after the merger can be estimated as follows:

- Market capitalization without synergy US$ 5,520 million
- Synergy   US$ 500 million
- Expected market capitalization   US$ 6,020 million
- No of shares outstanding after   US$ 220 million
  the merger
- Price of the acquiring   6,020/220 = US$ 27.36
  company
- Price of the target company   US$ 27.36 * Exchange ratio
                                         = US$ 16.4

The acquiring company controls 53 per cent of the combined company. That is, 0.53 * 5,420 million = US$ 2,872 million approximately. The target company's share is the balance.

The maximum premium that the acquiring company can pay is the amount of synergy expected. What if there are no synergies?

The acquiring company's shareholders are worse off to the extent of acquisition premium paid. The acquiring company shareholders' loss is the target company shareholders' gain. The exchange ratio determines the percentage ownership of the two companies after the merger and hence, the acquisition premium.

From the perspective of the shareholders of the target company, accepting shares rather than cash enables them to participate in the upside of the combined entity over and above the premium received. The downside is that they share losses if synergy does not materialize.

Stock offers can take any of the two forms: fixed shares or fixed value. In case of a fixed share offer, the number of shares to be issued is certain, but the value of the offer can fluctuate due to changes in the acquiring company's stock price between the offer and the closing dates. In other words, the acquired company shareholders suffer if the acquirer's stock price falls, but the proportional ownership of the two companies remains unchanged.

In the case of fixed value deals, the number of shares issued is not fixed until the closing date and depends on the prevailing price (on the closing date). By design, the proportional ownership of the two companies is not fixed in the case of fixed value deals. Assume that the acquisition price and the stock price of the acquirer are US$ 2 billion and US$ 75, respectively, on the offer date. The acquirer has to issue 2,000/75 = 26.6 million shares. Suppose the price declines to US$ 67 at the closing date. The acquirer has to issue 29.8 million shares. The increase in the number of shares issued to the target company reduces the acquirer's proportional ownership.

Under and Overvaluation

So far, we assumed that both the acquirer and the target company are fairly valued. Due to information asymmetry between managers and investors, it is possible for shares to be over or undervalued. Assume that the acquirer's stock price is US$ 75, whereas its 'intrinsic value' is US$ 100. If the target company has 100 million shares priced at US$ 50, the purchase price is US$ 5 billion, ignoring the premium. To acquire the target, the acquirer has to issue 5,000/75 million shares if one were to consider the market price; whereas the acquirer has to issue 5,000/100

million shares if the 'intrinsic value' is considered. In other words, the acquirer has to convince the target that its shares are undervalued; else it faces dilution. Likewise, if the target is undervalued, the acquirer can build the fact into the price determination by adding the amount of undervaluation to the market capitalization of the target to arrive at the acquisition price. Obviously, acquiring company shareholders would want to give as little a premium; and the converse is true of target company shareholders. In sum, stock offer should be avoided if the acquirer is undervalued.

How do Managers Choose a Method of Payment?

The asymmetric information theory hypothesizes that due to information asymmetry between managers and investors, shares could be over or under-valued. Managers, acting in the interests of existing shareholders, have an incentive to issue shares if they are overvalued. If this theory were right, we would expect managers to pay in stock rather than cash in the context of acquisitions.

The method of payment has tax consequences. Shareholders in the selling company will encounter a tax bill for capital gains if they accept cash. The tax treatment for stock-financed acquisitions favours the selling shareholders because they allow them to receive the acquirer's stock tax-free. In other words, selling shareholders can defer taxes until they sell the acquirer's stock. Due to the existence of different tax treatments, the acquirer must pay a higher acquisition price in case of cash offer to offset the tax burden of selling shareholders.

Managerial ownership refers to the percentage equity held by management and insiders in both the companies. The greater the managerial ownership, the more likely is the cash financing used in order not to dilute their holding.

The Impact of Method of Payment on Performance

The relative merits of acquisition for cash or shares should be analyzed after giving due consideration to the impact on EPS, capital structure and such others. Consider two hypothetical situations–one in which the target is trading at a P/E multiple of 20 and the other in which the target is

trading at a P/E multiple of 15. The acquiring company's stock is trading at a P/E of 18. The summary statistics are given here.

Before Acquisition

	Acquirer	Target A	Target B
EPS	2.50	5.0	5.0
MPS US$	45	100	75
P/E	18	20	15
Earnings	25	10	10

Situation 1: Acquirer pays 22.5 Times the Earnings

Suppose the target is acquired under the first situation at a P/E of 22.5. That is, the negotiated price is 225 million or 12.5 per cent premium over the current P/E. The acquirer issues 225 million/45 = 5 million shares.

Company B's EPS = 10 million/5 million = US$ 2/share

EPS of composite operations = Composite earnings/[acquirer's shares + new shares issued to A] = [25 million + 10 million]/[10+5] = US$ 2.33

Dilution of EPS for shareholders of acquirer = 2.5–2.33 = 17 cents.

Situation 2: Acquirer pays 15 Times the Earnings (current P/E)

The acquirer pays US$ 150 million or 15 times the earnings. That is, the acquirer issues 150/45 (=3.333) million shares.

EPS of target = 10 million/3.33 = US$ 3/share
Composite EPS = 35 million/13.333 million = US$ 2.62
Gain to shareholders of acquirer = 12 cents
The summary statistics are given here.

After Acquisition

	A	B
Acquirer pays	22.50 times earnings	15 times earnings
Composite EPS	2.33	2.62
Gain/loss	(0.17)	0.12

The important point that emerges from this analysis is that dilution occurs if the increase in number of shares is proportionally greater than the annual increase in earnings. In the first case, the acquiring company's

P/E multiple should increase to 19.3 to sustain its current market price. In the second case, the P/E multiple can come down to 17 without affecting the current price of the acquirer. Here is a quick and dirty method to find out if dilution will occur: If the acquiring company's stock price is greater than or equal to the price attached to the target company, dilution will not occur.

The post-merger P/E multiple for the combined firm is the weighted average of the pre-merger ratios.

$$P/E_{(A+B)} = \frac{N_A P_A + N_B P_B + \Delta V}{N_A EPS_A + N_B EPS_B}$$

where $N_{A,B}$ = number of shares of the acquiring and the selling firms, respectively.

$P_{A,B}$ = Stock price of the acquiring and the selling firms, respectively.
        EPS_A and EPS_B are their earnings per share.

ΔV is the increase in the value of the firm's equity after the merger (synergy).

One approach for picking an exchange ratio is to recognize that the market value of the combined entity is equal to the sum of:

- The stand-alone value of the acquirer.
- The stand-alone value of the target.
- The value of the net merger benefits.

In general, the exchange ratio is the product of negotiation between the merging companies. The healthier and better capitalized company or the company that made the greater contribution to the merger would be negotiating from a position of greater strength. The exchange ratio determines how the shareholders of the merging companies share the net merger benefits. One response is that the shareholders' entitlement to these benefits depends on how much of the merger benefits they have helped create. The exchange ratio, therefore, reflects a number of considerations like size, asset quality, contribution to cost savings and revenue enhancement, and so on. Hence, it is logical to argue that the exchange ratio should be based on the relative size and profitability of the merging companies. One could calculate the exchange ratio on the basis of a number of financial parameters like the ones listed here.

	Acquirer	*Target*
Size		
Assets		
Equity (book)		
Equity (market)		
Market valuation		
Price/Earnings		
Price/Sales		
Price/Book value		
Profitability		
ROA per cent		
ROE per cent		
Capitalization		
Equity/Assets per cent		

Often, the exchange ratio is set equal to the ratio of the merging firms' stock prices. When the merger is consummated, the market value of all outstanding target-company shares (which are extinguished under merger), by definition, must equal the market value of the new-company shares given to the target company shareholders in exchange.

$$P_{target} * N_{target} = P_{acquirer} * \Delta N_{acquirer}$$
Rearranging,
$$\Delta N_{acq}/N_{target} = \text{Exchange ratio} = P_{target}/P_{acq}$$

The average of 3-month, 6-month or 12-month stock prices might be used.

One can also estimate the merger synergies independently and assume an exchange ratio and estimate the premium over the pre-merger value of the company. This exercise might be conducted for a range of exchange ratios.

Maximum Exchange Ratio for the Acquiring Firm

The post-merger price of the acquiring company's stock should be at least as high as the pre-merger price to maintain the wealth position, that is, $P_{A+B} \geq P_A$. But P_{A+B} is the total value of the merged firm's equity divided by the number of shares outstanding.

$$P_{(A+B)} = \frac{N_A P_A + N_B P_B + \Delta V}{N_A + rN_B}$$

where r is the exchange ratio (B's shares for A's shares)

$$\frac{N_A P_A + N_B P_B + \Delta V}{N_A + r N_B} \geq P_A$$

Solving for r,

$$r \leq \frac{N_B P_B + \Delta V}{N_B P_A}$$

This is the maximum exchange ratio that can preserve wealth. As is evident, r is a function of increase in the value of the firm's equity after the merger.

If $\Delta V = 0$,

$$r \leq \frac{N_B P_B}{N_B P_A}$$

that is,

$$r \leq P_B / P_A$$

The exchange ratio can also be expressed as:

$$r_{max} \leq \frac{P/E_{(A+B)} \ (N_A EPS_A + N_B EPS_B) - N_A P_A}{N_A P_A}$$

Maximum exchange ratio is a function of the price-earnings multiple that is expected to prevail soon after the merger.

Minimum Exchange Ratio for the Selling Firm

From the selling firms' shareholders' perspective, the price of the shares sold should equal the price of the shares received, for their wealth position to be maintained.

That is, $r. \ P_{(A+B)} \geq P_B$

Wealth after merger = Wealth before merger

$$r_{min} \geq \frac{NA \ PA}{N_A P_A + \Delta V}$$

$$\geq \frac{NA \ PA}{P/E_{(A+B)} \ (N_A EPS_A + N_B EPS_B) - N_B P_B}$$

Value will decline for the selling firm's stockholders if exchange ratio below this is accepted.

Market Reaction to Merger Announcements

To assess the profitability of mergers and acquisitions, academic studies have adopted two approaches (excluding the clinical studies of one or a small group of companies). Event studies examine the abnormal returns to shareholders in the period surrounding the announcement of the transaction. The raw return for one day is simply the change in the share price and any dividends paid, divided by the closing share price the day before. The abnormal return is obtained by deducting a benchmark of what investors required that day (as estimated by CAPM or any benchmark index return, say, S&P 500). Accounting studies examine the reported financial results of acquirers before and after acquisitions to see how financial performance changed. These studies match acquirers and non-acquirers in the same industry of similar size. These studies attempt to find out if acquirers outperformed the non-acquirers. The results of event studies of returns to target and bidding firms for both stock and non-stock transactions are presented in Exhibit 6.2. The negative announcement period stock market reaction for acquiring firms is limited to those that finance the merger with stock. Acquiring firms that use stock to finance their acquisition experience an abnormal return of –1.5 per cent, while acquirers that do not use stock experience a small negative abnormal return (–0.4 per cent), close to zero. How do we interpret this result? One explanation is based on the information asymmetry between investors and managers. Managers are more likely to issue equity when the firm's shares are overvalued. Equity investors realize it and greet equity issues negatively. But, is the negative reaction to the announcement a response to the equity issue or the merger per se? In other words, to interpret the result, one needs to separate out the effect of equity issue from the effect of merger announcement.

Cash transactions are often funded with debt and thus tend to increase leverage. Conversely, stock transactions tend to decrease leverage. The increase in leverage generates tax shields (net of bankruptcy costs) due to which such transactions result in positive abnormal return, while leverage-decreasing transactions result in negative abnormal return.

Some studies have examined the long-run abnormal returns over the three-to-five years following a merger. Loughran and Vijh (1997) find that firms using stock financing have abnormal returns of –24.2 per cent over the five-year period after the merger, whereas the abnormal return is 18.5 per cent for cash mergers.

	Stock (%)	No stock (%)
EXHIBIT 6.2		
Announcement period abnormal returns for sub-samples, 1973–98		
Combined		
[−1, +1]	0.6	3.6
[−20, Close]	−0.6	5.3
Target		
[−1, +1]	13.0	20.1
[−20, Close]	13.0	20.1
Acquirer		
[−1, +1]	−1.5	0.4
[−20, close]	−6.3	−0.2
No. obs.	2,194	1,494

Source: Andrade et al. (2001).

Takeover Payment Method and Operating Performance

CFOs deciding on whether to finance an acquisition with cash or stock might consider how the chosen form of currency will affect operating performance. Managers have incentive to manipulate earnings before a stock-financed acquisition by aggressively accumulating the company stock, inflating its price and thus increasing its purchasing power. The question is whether manipulative accumulation actually occurs and, if it does, whether this kind of earnings management hurts the acquirer's operating performance after the deal closes.

This could explain why an acquirer's stock often performs poorly after a stock-financed acquisition, compared to the stock of companies using cash.

Heron and Lie (2002) examined 859 acquisitions completed between 1985 and 1997 and found no difference in post-acquisition operating performance between cash and stock financiers. They find that acquirers perform better than the industry average both before and after the acquisition, regardless of the payment method. Companies that showed the greatest improvements in operating performance included those that had acquired targets in the same industry and well-managed companies that had acquired poor performers.

If the operating performance has no relationship to the payment method, why are both announcement returns and long-term acquisition returns lower for a stock acquisition? One explanation is that investors are

overly optimistic about long-term growth prospects before an acquisition and revise their expectations later on. Changes in capital structure might also contribute. A dramatic increase in debt ratio after cash acquisitions may contribute to higher announcement and post-acquisition returns.

Stock acquisitions are exposed to the risk of stock price fluctuations. Stock acquisitions are generally structured as fixed value mergers and fixed exchange mergers. Under the second structure, the number of the acquirer's shares that each target stockholder will receive is calculated through a fixed ratio negotiated in the merger agreement. The target shareholders bear the risk of a decline in the acquirer's stock value. With a fixed value merger, the agreement first establishes the consideration per share that each shareholder will receive. It then calculates an exchange ratio using the average price of the acquirer's stock over a certain period. Under this approach, the target stockholders are not affected by declines in the acquirer's stock, but also may not benefit from increases.

In a fixed-exchange-ratio merger, the agreement may provide a floor value for the acquirer's stock, which protects the target shareholders, and a maximum value, which protects the acquirer from issuing shares at a high market value. The parties may provide for adjustment of the exchange ratio if the price of the acquirer's stock rises or falls too much. The agreement for a fixed value merger may also set a minimum and maximum fixed exchange ratio. Often, the target will negotiate the right to terminate the deal if the acquirer's stock falls below an acceptable level.

Target stockholders sometimes desire longer-term price protections. They may purchase over-the-counter derivatives to meet these needs. Financial institutions have developed costless-collars through which a shareholder may buy a put and sell a call on the stock. If the price falls more than a certain percentage, the put is used, while the institution can call the stock if the price rises by the same percentage. Because the call and put are of equal value, no payment is required.

Concluding Comments

As the deal description table presented at the beginning of the chapter suggests, roughly 8–10 per cent of all deals involve mixed payment. That is, these transactions are cash-and-stock transactions. The exchange ratio

for the stock component determines the percentage ownership. The percentage ownership and the cash paid determine the premium. In the case of all-cash deals, target shareholders have no downside because they are not exposed to the price fluctuations of the acquirer's stock. In an all-stock deal, the shareholders are exposed to price fluctuations and there is no downside protection. Cash-and-stock deals fall in between.

Design of consideration is one of the most important aspects of the transaction. Acquirers should determine whether their own shares are over- or under-valued, and the probability that expected synergies do not materialize in designing the contents of the offer. Likewise, sellers should determine the value of their company as an independent entity and compare it with the price offered. The analysis for stock or cash and-stock offers are similar to that performed by buyers.

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Exercise

The following data is available for two firms contemplating on a merger.

	A	B
No. of shares outstanding (million)	50	170
Stock price before the announcement	120	45
Exchange ratio (from A's perspective)	0.45	

Assuming that the stock price is the best estimate of the values of two companies,

- What is the price premium for B?
- What is the value of the merged entity?
- What is the respective equity ownership of A and B in the merged entity?

7
Accounting and Tax Factors in Mergers and Acquisitions

KENNETH R. FERRIS AND PHILIP DRAKE

CHAPTER OBJECTIVES
- Highlights the approaches for accounting for mergers
- Highlights global merger and acquisition reporting practices
- Highlights the taxation issues in mergers and acquisitions

Two essential components of every corporate restructuring transaction are: (*a*) the method of accounting imposed on the transaction by local professional or governmental regulators and (*b*) the taxation implications created by the transaction. While greater transparency and uniformity in the accounting treatment of similar transactions have been achieved in recent years throughout the world, merger and acquisition tax laws remain obtuse and are often highly culturally-dependent, varying widely across national borders. This chapter attempts to overview the dominant accounting approaches to and tax consequences of various forms of corporate restructuring such as mergers and acquisitions.

Accounting for Mergers and Acquisitions
Generally speaking, when a company obtains a majority ownership of the outstanding voting shares of another entity, it is usually the

case that the acquirer will be required to reflect the financial results (that is, the balance sheet, income statement and statement of cash flows) of the acquired entity on a consolidated basis with the parent company and any other companies controlled by the parent. The preparation of consolidated financial results, it should be noted, has been standardized in many countries to help avoid the problem of information overload by investors. Imagine the difficulty, for instance, of analyzing the numerous individual company-level financial statements of such conglomerates as General Electric in the US, Mitsui in Japan or Reliance Industries in India. The preparation of consolidated financial statements also provides certain cost savings to a parent company by making it possible to issue one set of consolidated data, rather than a plethora of individual financial statements. There is, however, a downside to the presentation of consolidated financial statements, namely that consolidated data is so highly aggregated that it is often difficult to assess how individual business segments are actually performing.

It is noteworthy, however, that not all countries (for example, India and Indonesia) require that a majority-owned (or even wholly-owned) subsidiary be consolidated with the parent company. Instead, the controlled subsidiary may, in these countries, be accounted for by using the *cost method* or the *equity method*. To illustrate, consider the 1994 acquisition of Prakash Fabricators Inc. by Jyoti Structures Limited of Kolkata, India. Despite the fact that Jyoti Structures acquired 100 per cent of Prakash's voting shares, Jyoti accounted for its newly-acquired subsidiary using the cost method. As a consequence, Jyoti reported its ownership in Prakash in a single balance sheet account (that is, 'Investment in Prakash Fabricators'), at the price that it had paid to acquire Prakash.

Alternatively, if Jyoti had chosen to report its acquisition of Prakash using the equity method, it would have initially reported the acquisition on its books in a single asset account (that is, the 'Investment in Prakash Fabricators'); but, the value of this account would have been subsequently increased (or decreased) by any profits (losses) earned by Prakash, and decreased for any dividends paid by Prakash. What is noteworthy about both the cost method and the equity method is that the financial results of an entire subsidiary are effectively summarized in a *single* balance sheet account on the books of the parent company (Exhibit 7.1). Clearly, for

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EXHIBIT 7.1

Accounting for an acquisition using the equity method*

Global Corporation Ltd (GC) purchased a 100 per cent shareholding in India Enterprises Inc. (IE) for 10 million rupees. Immediately prior to the acquisition, the balance sheets of the two companies appeared as follows:

	Assets	=	Liabilities	+	Shareholders' equity
GC	100,000,000		15,000,000		85,000,000
IE	7,000,000		2,000,000		5,000,000

In the year following the acquisition, IE earned net profits of 2,500,000 rupees and paid its parent company (and only shareholder) a cash dividend of 1,000,000 rupees. GC's balance sheet at the end of the first year following the acquisition will appear as follows (assuming no other events):

	Assets	=	Liabilities	+	Shareholders' equity
	100,000,000		15,000,000		85,000,000
IE's net profit	+2,500,000				+2,500,000
IE's dividend	−1,000,000				−1,000,000
	101,500,000		15,000,000		86,500,000

And, GC's 'investment in IE' will be valued for accounting purposes at 11.5 million as follows:

Investment in India Enterprises

Initial investment	10,000,000
+ Net profit	2,500,000
− Dividends paid	(1,000,000)
End of first year	11,500,000

*All values are in rupees.

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most financial statement users, there is insufficient information to assess whether the acquisition created or destroyed shareholder value.

Where consolidated reporting of the parent and the subsidiary is required, there are two approaches to the preparation of the consolidated financial data: purchase accounting and pooling-of-interests accounting. *Purchase accounting*, or what is also called 'acquisition accounting', is typically used in those restructuring transactions that are clearly an acquisition of one company by another. These transactions are usually executed (in whole or in part) by the exchange of cash for an acquiree's stock. Under purchase accounting, the acquiree is valued at the fair market-value of the assets exchanged by the acquirer for the acquiree's

stock.[1] Such transactions frequently involve a step-up in the value of the acquiree's book value to its fair market value prior to the actual consolidation of data. These transactions are also typically characterized by the presence of *goodwill* (that is, an amount paid in excess of the fair market value of an acquiree's net worth).

When an acquisition is executed by an exchange of voting stock (that is, the stock of the acquirer is exchanged for the stock of the acquiree), it may be permissible to account for the transaction as a merger using the pooling-of-interests method, or what some call 'merger accounting'. Under *pooling accounting*, the acquiree is valued at its current net worth, not the value of the shares exchanged. As a consequence, no goodwill is ever present under this accounting approach.

Before considering these two approaches in greater detail, it is necessary to first explore the concept of full versus partial consolidation.

Full versus Partial Consolidation

In most countries, when a company obtains a majority interest in the voting shares of another entity, accepted accounting practice dictates the use of consolidated reporting practice. Consolidated reporting, however, may involve either a *full* or *partial* combination of financial data. When a company acquires a 100 per cent shareholding in another, the consolidated results under either full or partial consolidation are exactly equivalent. However, when an acquired shareholding is less than 100 per cent, full and partial consolidation yield different consolidated financial results.

To illustrate, consider a simple transaction between two independent companies. Assume, for example, that Global Corporation Ltd (GC) purchases 90 per cent of the voting shares of India Enterprises Inc. (IE)

[1]An 'acquisition' can be executed in two ways—as a share purchase or as an asset purchase. In the former, the outstanding shares of an acquiree are acquired, making the acquiree a subsidiary of the acquirer; alternatively, in the latter, only the assets (or net assets) of the acquiree are purchased, leaving the acquiree to continue its existence independent of the acquirer, but in all likelihood, in another line of business. From an accounting perspective, the consolidated financial statements following a share purchase or an asset purchase are *identical*.

for 243 million rupees. Since the transaction is clearly an 'acquisition' as IE's shares are acquired for cash, purchase accounting is appropriate.

Assume also that immediately prior to the acquisition, the balance sheets of the two companies appeared as follows (in rupees):

	GC Ltd	IE Inc.
Assets	700,000,000	312,000,000
Liabilities	150,000,000	100,000,000
Stockholders' equity	550,000,000	212,000,000
Total equities	700,000,000	312,000,000

Assume further that according to GC's financial advisors, the fair market value of IE's net assets was 267 million rupees, or 55 million rupees more than its net book value of 212 million rupees. This increase in value was attributable to several long-term assets whose reported book values were below the current estimates of their fair market value. After considering this additional information, the analysts concluded that GC had purchased goodwill in the amount of 2.7 million rupees in the IE transaction, as follows (in rupees):

Fair market value of 90 per cent shareholding in IE	
$267,000,000 \times 0.90 =$	240,300,000
Purchase price	243,000,000
Less: Fair market value	(240,300,000)
Goodwill	2,700,000

GC may have been willing to pay a premium in excess of the appraised value of IE's net assets for several reasons: the presence of a loyal customer base for IE's product, a competent management group, an efficient distribution system, or anticipated cost savings and other synergies between the operations of GC and IE.

Immediately following the acquisition of IE, GC's unconsolidated (or parent-only) balance sheet would appear as follows (in rupees):

Assets	
Investment in IE	243,000,000
Other assets	457,000,000
Total assets	700,000,000
Liabilities	150,000,000
Shareholders' equity	550,000,000
Total equities	700,000,000

At this juncture, GC's consolidated financial statements will be dependent on the firm's decision to use full or partial consolidation–a decision that may be mandated by local accounting standards. Under *partial consolidation*, only 90 per cent of IE's reported values are transferred to GC's consolidated financial statements. Upon consolidation, GC's 'Investment in IE' is replaced with the assets and liabilities from IE that GC now controls, which must also be revalued to reflect their acquisition cost (or fair market value) and the goodwill that GC purchased as part of the acquisition. (Exhibit 7.2 shows the pre-acquisition unconsolidated balance sheets of GC and IE, along with the post-acquisition consolidated balance sheet assuming partial consolidation and full consolidation.)

EXHIBIT 7.2				
Acquisition accounting: partial versus full consolidation				
	Pre-acquisition		*Post-acquisition*	
	GC Ltd	*IE Inc.*	*Partial consolidation*	*Full consolidation*
Balance sheet:				
Assets				
Current and non-current	700,000,000	312,000,000	787,300,000[1]	818,500,000[2]
Goodwill	–	–	2,700,000	2,700,000
Total assets	700,000,000	312,000,000	790,000,000	821,200,000
Liabilities	150,000,000	100,000,000	240,000,000[3]	250,000,000[4]
Minority interest	0	0	0	21,200,000
Shareholders' equity	550,000,000	212,000,000	550,000,000	550,000,000
Total liabilities and Shareholders' equity	700,000,000	312,000,000	790,000,000	821,200,000

1 [(700,000,000 – 243,000,000) + (90 per cent × 312,000,000) + (90 per cent 55,000,000)]
2 [150,000,000 + (90 per cent × 100,000,000)]
3 [(700,000,000 – 243,000,000) + (100 per cent × 312,000,000) + (90 per cent × 55,000,000)]
4 [150,000,000 + (100 per cent × 100,000,000)]

Partial consolidation assumes that the parent's consolidated balance sheet should reflect only its *proportionate* interest in the net assets (that is, assets minus liabilities) of the acquired company. Full consolidation, however, assumes that since the parent company is the majority shareholder of the subsidiary, the parent effectively controls *all* of the subsidiary's net assets despite the fact that it might not own all of them. Thus, under *full consolidation*, *all* of the subsidiary's net assets are

consolidated with those of the parent. This practice, however, necessitates the creation of a new account–minority interest–to reflect the portion of the subsidiary's net assets not in fact owned by the parent company.

Under full consolidation, 100 per cent of the value of IE's assets and liabilities are transferred to GC's consolidated financial statements despite the fact that GC owns only 90 per cent of IE (Exhibit 7.2). The minority interest account, which represents the value of IE's net assets *not* owned by GC, appears as a credit balance on GC's consolidated balance sheet, although it is neither a debt obligation nor a shareholders' equity account. It is merely a balancing account required under the full consolidation approach. As a consequence, this account is frequently ignored by financial analysts when calculating such ratios as the debt-to-equity ratio or the debt-to-total capitalization ratio.

As a concluding observation, it is noteworthy that the full consolidation approach results in a higher level of total (but not net) assets being reported by the parent company on its consolidated balance sheet (for example, 821.2 million versus 790 million). The amount of excess assets (31.2 million) is equal to the amount of excess liabilities (10.0 million) and minority interest (21.2 million) disclosed on the consolidated balance sheet under the full consolidation approach.

Goodwill

Another consideration in acquisition or purchase accounting involves goodwill. Goodwill arises when one entity acquires another and pays more than the fair market-value of the acquiree. In the preceding illustration, GC was found to have paid 2.7 million rupees more than the appraised value of a 90 per cent interest in IE. But not all acquisitions are executed in this manner. In some instances, the acquirer company may exchange its voting stock for the stock of the acquiree. When such stock exchanges occur, accounting standards sometimes permit the acquirer to utilize the *pooling-of-interests* method of accounting.

Under the pooling-of-interests method, the value assigned to the acquirer's shares exchanged in an acquisition is *not* their fair market value, but the book value of the investment as reflected on the acquiree's financial statements. For example, if GC had acquired 100 per cent of

IE's voting shares by exchanging its own shares for the voting shares of IE, the value assigned to GC's investment in IE would be 212 million rupees. IE's book value would be used to value the GC investment even if the fair market value of the GC shares given up in the exchange exceeded 212 million rupees. An important consequence of the pooling method is that goodwill *never* occurs. Thus, if goodwill is reported on the balance sheet of a company, it can be inferred that the company has engaged itself in various acquisition transactions involving the purchase method. In 2001, the pooling method became unacceptable as a method to account for mergers and/or acquisitions in the US, and this trend is

EXHIBIT 7.3
Global merger and acquisition reporting practices

Merger and acquisition accounting			*Goodwill accounting*		
Country	Purchase	Pooling	Capitalize/ amortize	Capitalize	Direct write-off
Australia	√	–	√ (20 years)	–	–
Brazil	√	√	√	–	–
Canada	√	√	√ (40 years)	–	–
Denmark	√	√	√	–	√
France	√	–	√	–	√
Germany	√	√	√	–	√
Hong Kong	√	√	√	–	√
India	√	√	√	√	√
Italy	√	√	√	–	√
Korea	√	√	√ (5 years)	–	–
Mexico	√	–	√ (20 years)	–	–
Netherlands	√	√	√ (10 years)	–	√
Spain	√	–	√ (10 years)	–	–
United Kingdom	√	√	√	–	–
United States*	√	–	–	√	–
IASB Standard	√	√	√ (20 years)	–	–
European Union Standard	√	√	√	√	√

A check mark (√) shows that the method is permitted; a dash (–), that the method is not permitted; and (# of years), maximum goodwill amortization period; where unspecified, amortization period is 'useful economic life'. IASB is International Accounting Standards Board.

likely to continue throughout the world. Exhibit 7.3 reveals, for a selection of countries, whether merger accounting is currently permitted.

Even if the purchase method is used to account for an acquisition, however, some local accounting practices enable the acquirer to avoid disclosing the amount of goodwill incurred in an acquisition. For example, in Germany, Italy, Japan and the Netherlands, goodwill incurred as a consequence of an acquisition may be written off directly against various equity reserve accounts. To illustrate, consider again GC's acquisition of a 90 per cent shareholding in IE, wherein goodwill in the amount of 2.7 million rupees was incurred. Assuming partial consolidation, GC's consolidated balance sheet following the acquisition appears as follows:

	Goodwill capitalized to balance sheet	*Goodwill charged against equity reserves*
Assets		
Assets	787,300,000	787,300,000
Goodwill	2,700,000	–
Total assets	790,000,000	787,300,000
Liabilities	240,000,000	240,000,000
Shareholders' equity	550,000,000	547,300,000
Total equities	790,000,000	787,300,000

Note that under the charge-to-equity approach of accounting for goodwill, GC's total and net assets are reduced by the amount of goodwill (that is, 2.7 million rupees).

In most countries, if goodwill is capitalized to the balance sheet under purchase accounting, it must be periodically amortized against earnings, although the amortization period varies greatly from country to country. In Canada, for example, the typical amortization period is 40 years, whereas in Japan and Korea, a five-year amortization period is prevalent (for example, Exhibit 7.3). In any case, the presence of goodwill on the consolidated balance sheet of the parent company represents a 'drag' on the company's future earnings. In the case of GC, the reduction in earnings would be 540,000 rupees per year (that is, 2.7 million ÷ 5 years) if a five-year amortization period is used, or only 67, 500 rupees per year if a 40-year amortization period is adopted.

Companies that elect to write off goodwill immediately against existing equity reserve accounts do so primarily to avoid the reduction in future earnings associated with the amortization of goodwill. Why this election might be made by management can be explained with reference to existing stock market theories. It is widely accepted in the financial community that

a company's share price is a reflection of investor expectations regarding the company's future earnings. Hence, to maximize a company's share price, it follows that management should adopt those policies that maximize future earnings. One way to maximize the future accounting earnings of a company is to minimize the write-offs taken against future earnings (for example, goodwill amortization). Whether, in fact, the charge-to-equity method of accounting for goodwill results in a higher share price has not, as yet, been empirically documented.

Finally, although goodwill is most commonly found as an asset account on the balance sheet, on occasion an acquirer may find that its purchase price of an investment is *less* than the acquiree's recorded net book value. When this occurs, *negative goodwill*–a credit balance–is said to arise. Not surprising, the accounting for negative goodwill is quite diverse. In Germany, for example, negative goodwill is carried on the balance sheet as a credit balance and may be amortized to (that is, added to) earnings over time. Under US accepted accounting practice, however, negative goodwill may not be carried on a company's balance sheet and instead is usually written off against the remaining cost basis of an acquiree's long term depreciable assets. Finally, in those countries such as Italy and the Netherlands where the charge-to-equity method is permitted, negative goodwill may be added immediately to the acquirer's equity reserves. Each of these approaches produces a different effect on the acquirer's balance sheet and income statement; however, whether the cash flow effect is equivalent is a function of local tax regulations regarding the tax deductibility of goodwill. In general, goodwill arising in an asset purchase acquisition may be tax deductible, whereas goodwill arising in a share purchase transaction is rarely tax deductible (Exhibit 7.4).

As a concluding comment, the accounting treatment of goodwill in the US has recently changed. Currently, acquisition goodwill must be capitalized to the consolidated balance sheet, but need not be amortized. Instead, the capitalized goodwill is subject to an annual impairment test. It is widely expected that the International Accounting Standards Board will adopt a similar treatment for goodwill.

Taxation Issues for Mergers and Acquisitions

As companies move towards a borderless marketplace with seamless transactions crossing international boundaries, managers seek ways to

	EXHIBIT 7.4 International goodwill tax regulations	
Country	*Share purchase goodwill*	*Asset purchase goodwill*
Australia	–	–
Canada	–	75 per cent deductible; double-declining balance (28.5 years)
France	–	–
Germany	–	100 per cent deductible; straight-line amortization (15 years)
Italy	–	100 per cent deductible; straight-line amortization (5 years)
Japan	–	100 per cent deductible; straight-line amortization (5 years)
Netherlands	–	–
Spain	–	–
United Kingdom	–	–
United States*	–	100 per cent deductible; straight-line amortization (15 years)

A dash (–) shows that goodwill is not tax deductible.
*The United States Internal Revenue Code, Section 338–H10 permits a company, under certain conditions, to elect to treat a stock acquisition as an asset acquisition to gain goodwill deductibility under section 197 of the Revenue Reconciliation Act of 1993.

increase their market share and profitability. Cross-border mergers and acquisitions are one way in which companies extend their reach globally. However, the tax issues associated with cross-border transactions are anything but borderless. International expansion is met with numerous tax considerations at the country, regional and local levels. Understanding the tax factors associated with cross-border mergers and acquisitions provides an essential component for successfully executing a restructuring transaction.

The principal taxation goal in all mergers and acquisitions is to minimize (*a*) any transaction taxes and (*b*) any ongoing income taxes of the surviving entities. This section explores the major tax concepts and issues associated with cross-border restructurings and reviews several transaction structures designed to minimize the related tax consequences.

Asset versus Share Purchases

The decision as to whether an acquiring firm should purchase a target firm's assets or its shares will influence the taxes associated with a

transaction, as well as the resulting income taxes following the transaction. As a general rule, transaction taxes are lower for share purchases than for asset purchases.

One advantage of an *asset purchase* (relative to a share purchase) is that an acquirer can selectively choose the assets to acquire without assuming responsibility for the actual or contingent liabilities of the target company. Some countries, however, do not permit an acquirer to avoid all liabilities. For example, in Germany, the acquirer of a business assumes all liability for existing employment contracts, regardless of whether the acquisition is an asset or share purchase. Another benefit of an asset purchase is the step-up in cost basis that may be associated with the acquired assets. The cost step-up may be used to reduce future capital gains taxes and/or increase related depreciation deductions.

The main disadvantage with an asset purchase is that the transaction is, generally, a taxable event for the target corporation and its shareholders. Under an asset purchase, there exists the potential for double taxation, as the target corporation pays taxes on the capital gains of the assets sold and then again as the target's shareholders pay tax on the distributed proceeds if the target is subsequently liquidated.

In many tax jurisdictions, a *share purchase* can be structured as a tax-free exchange of shares. In reality, this 'tax-free exchange' is simply a tax-deferred exchange, with tax deferral lasting until such time the target corporation or the target firm shareholder disposes off the newly acquired shares.

With a share purchase acquisition, the target company's tax attributes are generally retained following the transaction. For example, an acquirer may be able to utilize any pre-acquisition accumulated tax losses and net operating losses (NOLs) of the target company to lower current and/or future tax obligations of the acquirer or of the consolidated entity. However, the use of NOLs following a merger may be restricted. Depending on the country, following a merger, a target company is frequently required to continue to operate substantially as the same business in order for the acquiring company to utilize any pre-acquisition NOLs.

Taxes Associated with the Transaction

The taxes typically associated with a restructuring transaction frequently include transfer taxes, capital gains and value-added taxes. Transfer

taxes, or stamp duty taxes, refer to taxes associated with the transfer of shares or assets from one entity to another. In the UK, the stamp duty tax is as high as 4 per cent on some assets, including land, buildings and goodwill, and as low as 0.5 per cent on share purchases. In the US, there is no federal transfer tax, but individual states may impose some limited transfer tax on various assets. Germany has no transfer taxes, but imposes a 3.5 per cent real estate transfer tax on the sale of domestic land and buildings.

Capital gains, defined as the difference between a seller's acquisition cost and the sales price, are the most common and prevailing taxes associated with mergers. In many countries, the capital gains tax can be deferred on share purchases until the exchanged shares are subsequently disposed off. Commonly referred to as a tax-free merger, obtaining capital gains tax relief is particularly difficult when a foreign company is the acquiring firm. For the Netherlands and the UK, capital gains tax relief is generally available for share exchanges by a foreign company. But in France and the US, creating a tax-free merger by a foreign corporation is subject to a number of conditions. Additionally, in the US, certain tax law provisions may convert any capital gains into ordinary income, which is generally taxed at higher rates.

A final transactional tax is the value-added tax (VAT) that may arise with an asset purchase. Generally speaking, the sale of an entire business as a going concern is outside the scope of VAT. However, some countries like France, may tax certain assets, such as inventory, even when an entire business is sold.

One overlooked opportunity to minimize transaction taxes is the tax deductibility of the acquisition costs associated with a corporate restructuring. Most acquisition costs are generally viewed as capital costs and, as such, are not immediately deductible. However, many jurisdictions provide for all, or at least a portion, of the acquisition costs incurred to be deductible immediately. In many countries, including Germany, Japan, the UK and the US, the determination of which acquisition costs are immediately tax deductible depends on when the final decision is made to acquire a target. Costs incurred prior to a final decision are generally tax deductible, whereas costs incurred after the final decision are capitalized and added to the basis of the shares or the assets.

Taxes After the Transaction

In planning an acquisition, the tax structure following a transaction is an important consideration, and if handled properly, can result in significant tax efficiencies. The principal issues include whether the entity can file a consolidated tax return, the tax impact on dividends, the deductibility of interest payments and the amortization of intangible assets, including goodwill.

Many countries, including Mexico and France, the Netherlands and the US, allow corporations to file consolidated tax returns wherein the profits and losses of the various subsidiaries are pooled. That is, a subsidiary with operating losses in the current year can match those losses against the operating profits of another subsidiary. Thus, the impact of consolidation is that the total current tax liability is lower for the consolidated company. Unfortunately, cross-border tax consolidation is not available in all countries (for example, Australia, Canada and Italy).

Merger and acquisition transactions present more complex tax issues when the entities are tax residents of different tax jurisdictions. For example, an acquiring firm is usually unable to offset the interest payments on acquisition debt against a target's profits if the new subsidiary is a tax resident of a foreign country. A common approach to resolving this problem is for the acquiring firm to establish a local holding company as a tax resident in the same country as the target. Under this structure, the interest costs of the holding company may be consolidated with the target's operating profits, thereby making the interest costs on acquisition debt tax-deductible.

Another major issue associated with cross-border restructurings is the double taxation related to income earned and dividends paid by subsidiaries located in tax jurisdictions outside that of the parent company. Double taxation occurs when more than one domain's taxes are levied on the same income and/or capital gains of a company. Countries generally levy taxes on (*a*) their residents, (*b*) the operating activity that occurs within its borders and (*c*) from jurisdictional sources that generate profits. It is reasonable to expect, for instance, that a US resident company which receives Brazilian source income could be taxed on the same income by both the US and Brazil tax authorities, assuming the absence of rules limiting double taxation.

For cross-border dividends, double taxation occurs when a subsidiary in one country distributes a dividend to its parent company in another country. The subsidiary pays taxes on the profits that generated the dividend, and the parent company receiving the foreign dividend incurs taxes on the dividend income. Another tax burden accompanying cross-border dividends are the withholding taxes often imposed by local tax authorities when dividends are paid to a foreign parent. These dividends result in 'tax leakage', a reduction of net cash, when the dividends received by a parent company are treated as income by the parent's taxing authority. Thus, a significant portion of a subsidiary's profits may be taxed and withheld when a subsidiary distributes a cross-border dividend. For a parent company, the withholding tax can result in: (*a*) a tax credit against the subsidiary's income, (*b*) a refund of the tax or (*c*) a total loss to the parent company.

Relief from cross-border dividend double taxation can sometimes be obtained by exemption, credit or deduction. Relief by exemption occurs when a parent's tax jurisdiction exempts a dividend from taxation for which foreign taxes have been paid. And, relief by credit occurs where the parent's tax jurisdiction grants a tax credit for foreign taxes paid. Finally, relief by deduction is available where the foreign taxes paid by a subsidiary are allowed as a tax deduction within the parent's tax jurisdiction. Such relief is established either by a tax treaty between two countries or by unilateral relief where a country grants relief to its resident companies receiving dividends from foreign subsidiaries. Depending on the tax jurisdiction, relief may require that the parent company maintain a sufficiently large equity interest in the subsidiary or hold its interest for some minimum length of time.

Interest payments for a borrower are generally tax-deductible against the borrower's operating profits; however, exceptions to this general rule may be enforced where violations of the 'thin capitalization' rules or violation of the 'debt creation' rules for interest incurred on acquisition debt arise. Thin capitalization rules exist to discourage foreign companies from structuring local subsidiaries with high levels of debt, such that the related interest charges serve to reduce the taxable income of the local subsidiary, thereby reducing local taxes. Violation of an established debt-to-equity ratio (that is, thin capitalization) often results in the interest payments treated as a de facto dividend payment, such that the local subsidiary's taxable income and taxes increase.

In a cross-border merger transaction, an acquiring firm can push down any related acquisition debt to the local subsidiary or a local holding company, subject to consolidation and the thin capitalization provisions. As a consequence, the deductibility of interest will reduce the cost of capital associated with the acquisition relative to a share purchase as dividends are not tax deductible.

Transaction Structures

Selecting the structure for a cross-border M&A is an important decision, as the selected structure will surely want to minimize the total tax impact, both at the time of the transaction and subsequently. The transaction structures described next are general examples that have been successfully used to achieve this objective.

Hive Down

A common structure in which an asset purchase is restructured as a share purchase for tax purposes is known as a hive down. The structure is created by a three-step process (Exhibit 7.5), as follows. First, the target company creates a new subsidiary, 'Newco'. Second, the target company's business assets are transferred to Newco. Finally, Newco is sold to the acquiring company through a share purchase.

EXHIBIT 7.5
Hive down
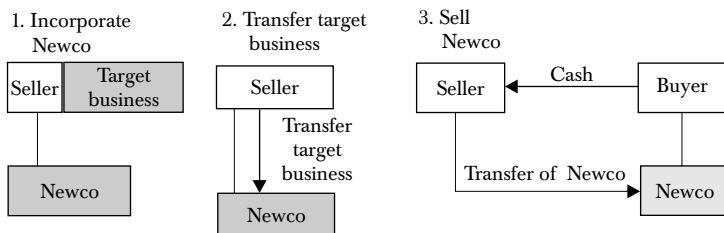
Such a transaction in the US would not be allowed as a tax-free exchange. The United States tax authorities consider the substance of a transaction when determining whether it should be a tax-free exchange. Most other countries let the form of the transaction determine the taxable status.

Income Access

To avoid the difficulties associated with cross-border dividends, income access structures, also known as 'stapled stock', make it possible for shareholders to receive dividends as if from their own tax jurisdictions and thus in a tax-advantaged manner. Cross-border mergers using the income access structure include the Waterford (UK)/Wedgewood (Ireland) merger in 1986 and the Wiggins (UK)/Arjomare-Prioux (France) merger in 1990.

Under the income access structure, a company located in Country A purchases a foreign subsidiary located in Country B through a share purchase. Instead of declaring dividends to the subsidiary's shareholders, the subsidiary issues income access shares to its shareholders through a local holding company. The dividends of the income access shares are based on the profits of the subsidiary, bypassing the cross-border dividend problem (Exhibit 7.6).

EXHIBIT 7.6
Income access
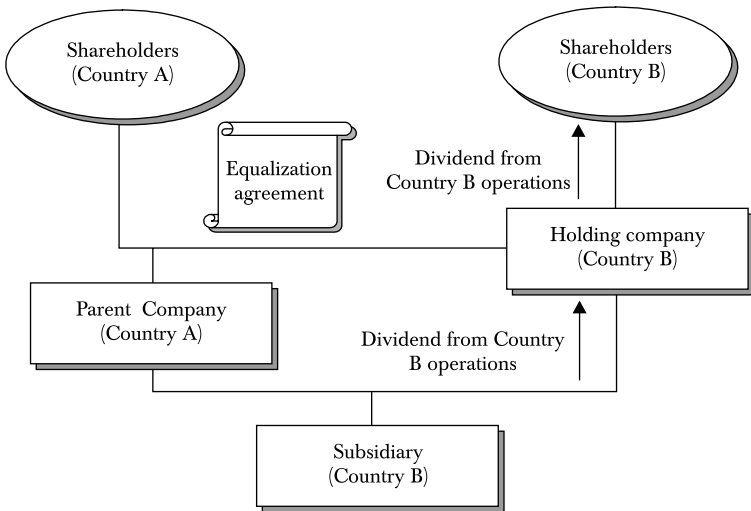
In essence, shareholders hold shares in two companies in two different tax jurisdictions. The shareholder, to the extent possible, elects to receive any dividends in a particular jurisdiction (that is, their own tax

jurisdiction), and as such, the dividends on the other 'stapled' stock are reduced accordingly.

Two-Step Acquisitions

A two-step acquisition involves the creation of a local subsidiary in the same country as the target. In the first step, the local subsidiary acquires the target. In the second step, the foreign parent has the local subsidiary holding the debt used to finance the acquisition and offsets the interest payments against the operating profits of the acquired target.

The two-step acquisition structure works best where consolidation of tax returns is permitted. Otherwise, the structure may be used to create a tax-free step-up of the target's assets for depreciation and capital gains purposes.

One potential disadvantage of the two-step approach is that the target company shareholders may pay capital gains taxes on the increased value of the assets. Another drawback is that the ability to carry-forward tax operating losses may be restricted or, in some cases, not permitted.

Triangular Mergers

Acquisitions of US companies by foreign companies are often effected via a triangular merger (for example, Lucas [UK] and Varity [US]), which closely corresponds to the two-step acquisition described earlier. A forward-triangular merger involves the acquiring company creating a US subsidiary, Newco, which then merges with the target company. Newco remains as the surviving entity and the shares of the target company are cancelled in consideration for shares in the foreign parent acquirer. Shares from the foreign parent are issued to the US target shareholders (Exhibit 7.7). For the target company and its shareholders, this structure generally has adverse tax effects as the transfer of assets to the Newco subsidiary in exchange for the merger consideration is treated as a liquidation by the US tax authorities, and thus, a taxable event.

A reverse-triangular merger (for example, Daimler [German] and Chrysler [US], Unilever [Dutch] and Bestfoods [US]), is similar to the forward-triangular merger. The principal difference is that, following the merger between the US Newco and the target, the surviving corporation is the target company, not the US Newco subsidiary. The main benefits of a reverse-triangular merger are: (*a*) the transaction is treated as a share

EXHIBIT 7.7
Forward triangular mergers
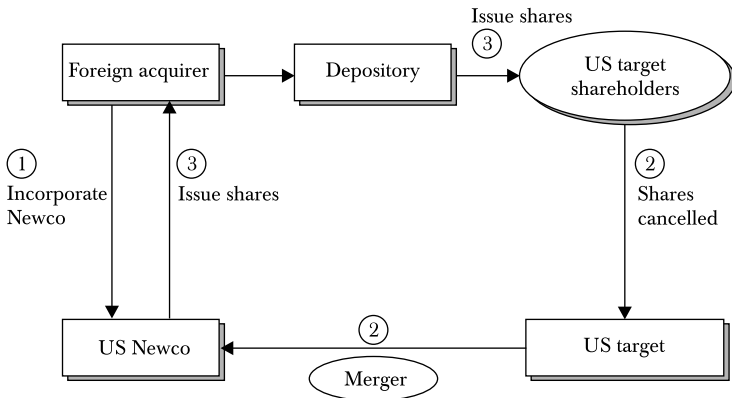
purchase and (*b*) the acquirer can readily squeeze out target minority shareholders who are unwilling to sell their shares. Triangular mergers are difficult to implement as a hostile takeover, however, because the target shareholders must approve the transaction.

Dual-Headed Structures

In those instances in which the merging companies desire to maintain their pre-merger identities, the dual-headed structure allows the assets to be grouped together through intermediate holding companies (Exhibit 7.8). A number of political, cultural and economic reasons may dictate a dual-headed structure. For companies that desire to maintain their national identity or be considered for listing on their domestic stock exchanges and indexes, the dual-headed structure is attractive. Dual-headed structures have been employed in many cross-border mergers, including Asea AB (Swedish) and BBC Brown Boveri (Swiss) to form ABB ASEA Brown Boveri, AMEV/VSB (Dutch) and Group AG (Belgian) to form Fortis, and BHP Limited (Australian) and Billiton (UK) to form BHP Billiton.

A dual-headed structure brings two companies together and combines their operations while maintaining their pre-merger corporate identity. This is accomplished by merging the companies as separate legal entities with arrangements that ensure the group operates as a single entity. There

EXHIBIT 7.8
Dual-headed structures
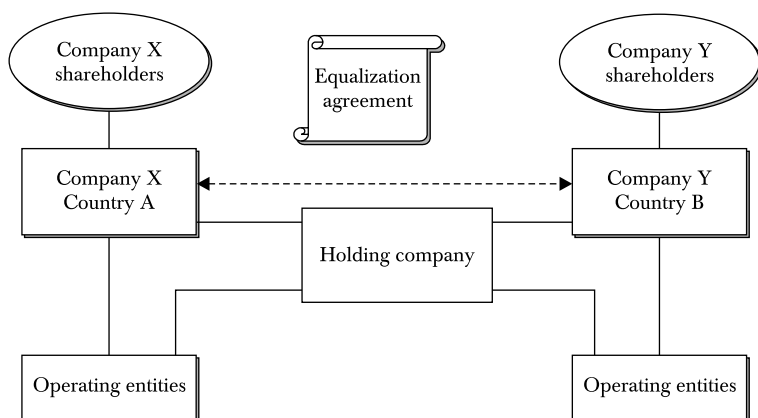
are three variations of the dual-headed structure. The most common is the 'combined group structure' wherein an intermediate holding company owns the operating companies of the group. The top-tier companies are structured under the holding company with voting rights in the holding company. Other forms include a 'separate entities structure' in which the two top-tier companies are not combined but operate as a single entity. In this structure, the assets remain with the pre-merger companies. Finally, the 'twinned-share structure' is based on the creation of units that contain the shares of both companies.

The main advantage of these structures is that they allow for continuity of companies' domicile, continuity of corporate identity, capital gains tax advantages and efficient flow of income across borders. Maintaining a company's domicile can be important where there are strong national interests at stake (for example, defence, media, financial) or where the government needs the ability to exercise some control over the company. Further, listing on domestic stock exchanges and indexes generally requires that a company be a domestic corporation.

Many countries permit cross-border transactions resulting from share purchases to be tax-free. However, this is not universal. A dual-headed structure avoids the capital gains tax issues associated with a share exchange by allowing the shareholders to maintain their original shares. Dividends received from domestic corporations are more tax efficient

than cross-border dividends from foreign companies. By maintaining the top-tier company as a domestic corporation, the dividends paid are from local companies. This avoids concerns with dividend-withholding taxes as well as the availability of foreign dividend credits or deductions.

Dual-headed structures do create a number of post-merger difficulties, primary of which is the complexity regarding the corporate and management structure that follows–two top-tier companies, two sets of shareholders, and often, two sets of management and boards of directors. The governing agreements designed at the time of the merger can be complex and a challenge to implement. Other concerns include share price differences that arise when one country's tax law changes post-merger or one top-tier firm is listed in a highly visible index. Another concern is the difficulty of takeover bids for one or both top-tier companies. Not surprisingly, many companies use the dual-headed structure as an initial merger structure, followed by a unification of the companies some years later. Unified companies from a dual-headed structure include Zurich Financial Services, Dexia and Fortis.

The Daimler Chrysler Merger: A Model Framework

In 1998, Daimler-Benz (a German company) and Chrysler (a US company) executed the first major German–US M&A transaction. Hyped as a 'merger of equals', this transaction serves as a model framework for creating tax-free cross-border acquisitions.

A significant issue associated with the merger was the location of the surviving parent company–Germany, the US or a third country. With half of Daimler's supervisory board comprised of union employees, it would have been politically difficult to win approval for the new company, DaimlerChrysler, if the parent company was not a German AG. Fortunately, the extant tax laws favoured this decision as well.

The transaction essentially involved a series of three steps (Exhibit 7.9):

1. A German stock corporation, DaimlerChrysler AG, was created.
2. Daimler-Benz AG shares were then exchanged for DaimlerChrysler AG shares as a contribution-in-kind exchange.
3. Finally, using a shell company merged into Chrysler Corporation, the Chrysler Corporation shares were contributed into DaimlerChrysler

EXHIBIT 7.9
The Daimler Chrysler merger
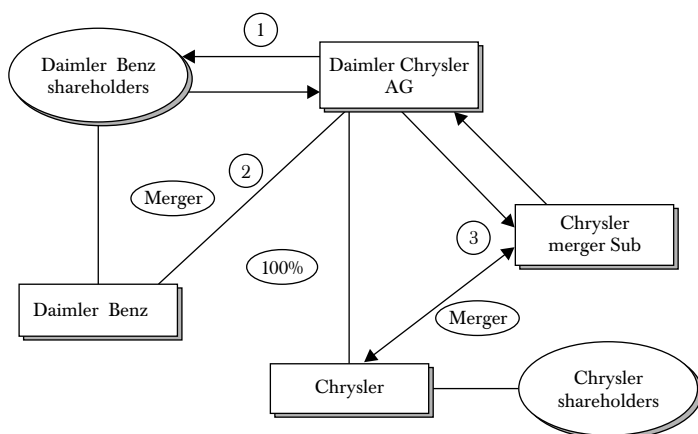
AG, making DaimlerChrysler AG the parent of Chrysler Corporation in return for the DaimlerChrysler shares.

This structure was beneficial because it took advantage of various tax laws in both Germany and the US. First, at the time, German tax law permitted like-for-like (for example, share-for-share) exchanges on a tax-free basis. Thus, the Daimler-Benz shareholders were able to exchange their Daimler-Benz AG shares for the DaimlerChrysler AG shares tax-free. Second, the Chrysler shareholders could contribute their shares to DaimlerChrysler AG tax-free so long as the Daimler-Benz AG shareholders held the majority of DaimlerChrysler AG immediately following the merger. Third, this structure facilitated access to the German tax law providing that dividends paid by a US firm (Chrysler Corporation) to a German company (DaimlerChrysler) to be tax-exempt due to a German/US tax treaty. Finally, the use of a German corporation provided a future opportunity to dispose off the Chrysler Corporation shares tax-free.

It is interesting to note that a slightly different transaction structure would have resulted in significant tax burdens for both corporations and its shareholders. For example, if the newly formed DaimlerChrysler were a US corporation, the German shareholders would not have been able to

transfer their shares tax-free. Also, if the US shareholders had received a majority of the shares in the new company, a taxable transfer would have been triggered. Either of these events were potential 'deal-breakers'.

Concluding Comments

The success of a merger or acquisition depends, in part, on the financial accounting and tax implications associated with the transaction. This chapter reviews the primary accounting considerations relating to mergers and acquisitions.

Accounting issues surrounding how a company consolidates and reports its operations along with the various treatments of goodwill have a significant impact on the resulting financial statements. The tax effects of the merger or acquisition can potentially turn a good deal into a bad one. An understanding of how to structure the deal that defers as much tax as possible, as well as identifying the potential subsequent taxation following the transactions is essential to ensure that all stakeholders benefit from the merger or acquisition.

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8
Cross-Border Acquisitions

CHANDRASHEKAR KRISHNAMURTI AND VISHWANATH S.R.

CHAPTER OBJECTIVES

- Highlights the motivations for cross-border acquisitions
- Provides an overview of trends in cross-border acquisitions
- Highlights the empirical evidence on cross-border acquisitions
- Highlights the issues in cross-border valuation
- Provides a summary of takeover code in select countries

A firm can expand into another country by way of a greenfield investment in a new facility or by merging/acquiring a local firm. Cross-border mergers and acquisitions, like their domestic counterparts, involve a change in the control of the target firm, whereas a greenfield investment creates new assets. In a cross-border merger, the assets and operations of the two companies are combined to establish a new entity, whereas in a cross-border acquisition the control of assets is transferred from a local to the foreign company. The local firm then becomes an affiliate of the foreign parent. Depending on the percentage holding in the target firm, the acquisition creates a minority (10–45 per cent of voting shares) or a majority (50–99 per cent of voting shares) interest.

Cross-border acquisitions can be classified as horizontal, vertical and conglomerate. Horizontal mergers take place between competing firms in the same industry to achieve synergy; vertical mergers take place between

firms in the different parts of the value chain (for example, buyer and supplier) to reduce transaction costs; and conglomerate mergers take place between companies in unrelated activities. Exhibit 8.1 presents the merger statistics by type.

EXHIBIT 8.1 World cross-border M&As, by type (Horizontal, vertical and conglomerate) 1995–99 (percentage)						
	Number			*Value*		
Year	*Horizontal*	*Vertical*	*Conglomerate*	*Horizontal*	*Vertical*	*Cong.*
1995	53	5.6	41.4	65.5	2.7	31.8
1996	54	5.7	40.3	56.9	5.5	37.6
1997	54.1	5.2	40.7	58.1	4.9	37.0
1998	56.5	6.2	37.3	68.8	5.9	25.3
1999	56.2	6.2	37.6	71.2	1.8	27.0
Source: UN World Investment Report (2000).						

As Exhibit suggests, a large number of transactions are horizontal or conglomerate mergers.

Depending on the mood of the acquirer, acquisitions can be either friendly or hostile. In a friendly takeover, the target firm agrees to the transaction, whereas hostile takeovers are undertaken against the wish of the target company's board. Exhibit 8.2 presents the cross-border merger statistics according to the tone of the transaction.

EXHIBIT 8.2 Friendly versus hostile cross-border M&A transactions, 1995–99					
Year	*World (total)*	*Developed countries*		*Developing countries*	
		Friendly	*Hostile[1] (US$ billion)*	*Friendly*	*Hostile*
1995	186.6	145.5	7.9	14.8	0.2
1996	227	172.4	6.6	30.6	0.2
1997	304.8	220.9	5.9	61.5	0.2
1998	531.6	431.2	2.7	75.2	–
1999	720.1	605.2	8.8	60.9	–
Source: UN World Investment Report (2000).					

[1]The rest are neutral transactions.

A large number of transactions are friendly in nature, partly because of the acquirer's unfamiliarity of the culture and environment in the host country.

Motivations for Cross-Border Acquisitions

Businesses now operate in a global economy where national borders mean little to multinationals employing worldwide personnel and financial strategies to suit their strategic objectives. M&A activity is driven by many factors like strength of the currency and stock market, tax, regulatory and technological changes, and level of interest rates. Exhibit 8.3 presents the level of M&A activity around the world.

EXHIBIT 8.3 Worldwide M&A activity	
Year	*Value of announced deals (US$ trillion)*
1995	0.8
1996	1
1997	1.5
1998	2.3
1999	3.2
2000	3.3
2001	1.7
2002	1.3
2003	1.4
2004	2
2005	2.9
2006	3.8
Source: KPMG.	

The following factors, among others, have contributed to the growth in cross-border acquisitions:

Globalization of Markets

The European unification, for instance, has increased competition among acquirers. In a poll of corporate M&A officers conducted by *Mergers and Acquisitions*, nearly three-fifths of the respondents reported that the 1992 unification of the European common market into the European

Community has prompted them to make or plan acquisitions overseas.[2] But an even greater number see globalization of industries as a far more pressing reason for going abroad. For example, 76 per cent stated that their companies need to go abroad in response to globalization, and 65 per cent said that their companies were not sufficiently represented overseas. Only 8 per cent contended that their companies had enough overseas presence which allowed them to pass up acquisitions and joint ventures abroad. Exhibits 8.4 and 8.5 present the European M&A volume for different types of deals.

Regional M&A Markets in 2006
Worldwide announced M&A 2006

	Value US$ billion	No. of deals
Worldwide	3799.1	36,958
Americas	1854.6	13,196
Africa/Middle East	64.5	770
Europe	1432.1	11,741
Japan	103.2	2525
Asia-Pacific	343.3	8726
including		
India	35.4	1173
China	43.2	1923

Source: KPMG.

EXHIBIT 8.4
Cross-border M&A activity in Europe (buying-being bought), deal value US$ billion for the period 1996–99
UK	100
France	80
Germany	−80
Other EU countries	−130
Source: Boston Consulting Group.

Opportunity to Add Additional Value

Many companies in many countries have already extracted a significant proportion of the available value from domestic opportunities. These companies have exhausted the opportunity to improve profitability

[2]Kissin, W.D. and J. Herrera. 1990. 'International Mergers and Acquisitions', *Journal of Business Strategy*, July–August.

EXHIBIT 8.5
Intra-industry takeovers as a % of total number of cross-border and domestic European M&As

	Cross-border bids (%)	*Domestic bids (%)*
Media and entertainment	79.4	78.9
Consumer staples	76.6	76.5
High technology	72.4	71.9
Real estate	72.4	75.0
Industrials	70.6	68.2
Materials	69.3	63.2
Healthcare	67.7	70.2
Retail	66.3	71.4
Energy and power	65.0	65.0
Consumer products and services	62.0	62.5
Telecommunications	48.0	41.3
Financials	45.9	27.7

Source: Martina Martynova (2006).

through better cost management and efficiency gains by consolidation. Cross-border acquisitions provide additional opportunities to reap the benefits of economies of scale. Risk can be diversified across markets. The combination of large size and international scope can lower both overall costs and unit costs as activities are moved to the most advantageous locations.

Other factors that contribute to the growth of cross-border M&A include international deregulation, which removes barriers, global perspective adopted by institutional investors who provide capital and homogenization of customer profiles across markets.

Trends in Cross-Border Mergers and Acquisitions

As pointed out in earlier chapters, the worldwide takeover activity has been averaging US$ 3 trillion in the recent years. Like IPOs, mergers also come in waves in the US; once in the late 1980s and again in the second half of the 1990s due to heightened industrial restructuring. The number of acquisitions with values in excess of US$ 1 billion has increased from 14 to 109 between 1987 and 1999.

In Europe, the value of cross-border M&As is growing at over 100 per cent a year. This exceptional rate would be even higher if CEOs were

less inhibited by the various barriers to cross-border deals, in particular by their fear of national cultural differences. These barriers are greatly exaggerated, and they constrain companies from doing deals that create far more value than is generally recognized.

EXHIBIT 8.6
Top 10 cross-border deals completed in 1999

Rank	Value (US$ billion)	Acquirer	Target
1	60.3	Vodafone Group	AirTouch Communications
2	34.6	Zeneca Group	Astra AB
3	32.6	Mannesmann AG	Orange LLC
4	21.9	Rhone-Poulenc SA	Hoechst AG
5	13.6	Deutsche Telekom AG	One 2 One
6	13.2	Repsol SA	YPF SA
7	12.6	Scottish Power PLC	PacifiCorp
8	10.8	Wal-Mart Stores (UK)	ASDA Group
9	10.8	Aegon NV	TransAmerica Corp.
10	10.1	Global Crossing Ltd	Frontier Corp.

Source: UN World Investment Report (2000).

EXHIBIT 8.7
Top five TNCs with cross-border M&A activity, 1987–99

Rank	Name	Home	Value (US$ billion)	No. of deals
1	B P Amoco LLC	UK	65	76
2	Vodafone Group	UK	60.3	9
3	Mannesmann	Germany	44.7	44
4	DaimlerChrysler	Germany	42.9	67
5	Zeneca Group	UK	35.8	12

Source: UN World Investment Report (2000).

Exhibits 8.6 and 8.7 present the details of the top 10 cross-border deals completed in 1999 and the five largest transnational corporations with cross-border M&A activity between 1987 and 1999.

In December 1999, Vodafone AirTouch made the world's largest hostile bid for Mannesmann, a German telecom company valued at 138 billion Euros. Vodafone, based in the UK, is one of the world's largest international mobile telecom company. On 1 January 1985, Vodafone made the UK's first mobile call. This call was to mark the launch of the mobile industry and to transform the communications world. In the first 15 years, Vodafone became the largest company in Europe

by market capitalization and the largest telecommunications company of its kind globally. Vodafone has a customer base of over 100 million and interests in network operators across 28 countries. Vodafone acquired Air Touch in January 1999. Mannesmann started off as a manufacturer of seamless steel tubes in 1890 and entered the telecom industry in 1990. The company soon became one of the top players in Europe. In 1999, Mannesmann acquired Orange PLC, another UK telecom company. The initial offer by Vodafone was rejected by Mannesmann. In 2000, the acquisition of Mannesmann was completed, making Vodafone one of the largest companies in the UK and in Europe by market capitalization, and one of the top 10 companies in the world.

Empirical Evidence on Cross-Border Acquisitions

The empirical studies of the impact of mergers/acquisitions on corporate performance can be classified into two categories. The first group is 'event studies', which use changes in share price to gauge changes in firm value. The second group measures corporate performance mainly by comparing various measures of profitability before and after the transaction. The rate of success or failure is typically assessed by comparing the performance with a relevant control group of companies.

The event studies assume that stock markets are efficient in the sense that changes in share prices of the firms involved, after controlling for market movements in general, represent the value of the event. Corporate performance is measured by comparing the share prices from before and after the transaction relative to a relevant control group. Evidence on domestic (US and UK) M&As indicates that a target firm's shareholders generally lose or break even (Jensen and Ruback, 1983). Similar studies have been conducted on how cross-border acquisitions (from the perspective of a US acquirer) differ from domestic transactions, based on stock and operating performance measures. For a sample of 4,430 acquisitions between 1985 and 1995, Moeller and Schlingemann (2002) find that US acquirers experience significantly lower stock and operating performance for cross-border than for domestic transactions. They also find that bidder returns are negatively related to the target country's economic restrictiveness.

Based on an analysis of all public deals in Europe between 1996 and 2000, Boston Consulting Group found that, on an average, cross-border

deals created value (as measured by MVA)[3] for both the acquirer and the target, although acquiring companies experienced substantially lower returns.[4] The study finds that the average increase in value for

	EXHIBIT 8.8
	Empirical evidence on European acquisitions
No. of deals	Value creation of acquirer Market adjusted (%)
1	<–30
2	<–20
16	<–10
23	<–5
58	<0
45	<5
35	<10
13	<20
10	<30

Source: Crossing Borders: European Mergers and Acquisitions, Boston Consulting Group Report, 2000.

the shareholders of the target companies was 30 per cent and for the shareholders of the acquirer it was one per cent. Exhibit 8.8 presents the results of the study.

Cross-Border Valuation

The DCF methodology for evaluating a project or an acquisition involves estimation of cash flows and discount rate. If the NPV is positive, the acquisition can be accepted; if negative, it should be rejected. Estimating cash flows for a foreign acquisition is just an extension of its domestic counterpart except that the cash might be more variable or volatile. More specifically, cross-border valuation involves:

- Estimation of cash flows specific to *that* acquisition.
- Estimation of discount rate specific to *that* acquisition.

Managers evaluating an international acquisition need to address two questions: Should the acquisition be evaluated from the perspective of

[3]MVA (market value added) is a short-term measure that looks at the difference between the market capitalization of an acquiring company five days before a deal is done and its market capitalization five days after.

[4]'Crossing Borders: European Mergers and Acquisitions'. 2000. Boston Counselling Group Report, September.

managers in the country in which the firm is located or that of the parent company? Should the cash flows be adjusted downwards or the discount rate be raised to account for differential political and economic risks?

An international acquisition can be evaluated in two stages. In the first stage, the firm is evaluated from the subsidiary's perspective. In the second stage, the amount and timing of profits repatriated (after paying taxes) to the parent company are estimated. It is common practice to make ad hoc adjustments to cash flows or discount rates. For instance, if a company were to use 15 per cent discount rate for a domestic acquisition, it might raise it to 20 per cent for a foreign acquisition. Such adjustments, obviously, do not have a sound basis. Some academics suggest that it is better to adjust cash flows to account for risks (and not discount rate) because international risks are unsystematic in nature and hence diversifiable. Remember that only systematic risk matters in a CAPM universe. Whether or not the discount rate for foreign acquisitions should be revised depends on how managers view risks in international projects. If the risks are adequately reflected in the project beta, then it is inappropriate to add an additional risk premium to the discount rate. There are two alternative approaches for valuing overseas investments.

Approach 1

1. Forecast foreign currency cash flows using host country tax rate and inflation rate.
2. Estimate foreign currency discount rate using project (target firm)–specific capital structure and beta.
3. Calculate PV of the free cash flows in foreign currency.
4. Convert to home currency using spot exchange rate.

Approach 2

1. Forecast foreign currency cash flows using host country tax rate and inflation rate.
2. Forecast future exchange rates using parity relationships and convert cash flows to home currency.
3. Estimate home currency discount rate using project-specific capital structure and beta.
4. Calculate PV in home currency.

The two approaches usually give the same answer.

Adjusting Cash Flows

The effect of international risk can be incorporated by charging a premium for political and economic risks against each year's cash flows. That is, incorporate the cost of buying an insurance to cover political risk from an agency like Overseas Private Investment Corporation or the Lloyd's of London and the cost of covering economic risk by a forward cover in the currency market. Another approach is to estimate the probability of expropriation and the expected value (mean) of cash flows. Once the cash flow in the host country's currency is estimated, probabilities are attached to different exchange rates (between local currency and home currency) forecasted by the analyst to translate cash flows into home currency.

Adjusting Discount Rate

Whether or not the discount rate for a foreign project should be adjusted depends on how one views international risk. Modern finance theory suggests that only systematic risk of a project matters as unsystematic risk can be diversified away. A multinational, due to its global focus, can diversify country-specific risk as long as cash flows from these countries are not perfectly positively correlated. The standard measure of systematic risk is beta, which measures the sensitivity of asset returns to market returns. What is the appropriate proxy for the market portfolio in case of a multinational investment? Is it the portfolio in the country of operation or that in the home country? Or could it be a *global* portfolio?

The cost of equity estimate depends on the company's beta, which could be estimated using the home country index or some global index. The choice depends on the investment opportunity set facing the company's investors. If the investors are assumed to be internationally diversified, the returns on a global portfolio would be a better benchmark for assessing the cost of equity. As long as there are benefits from international diversification, a portion of what seems to be systematic risk in a domestic context may be diversifiable country risk at a global level. If markets are completely integrated, there would be no benefit from international diversification. Although the tendency of markets to move together has increased in the recent years, the correlation is still less than one (Exhibit 8.9). So, there are still risk-reducing opportunities.

The impact of globalization of capital markets has important implications for cost of capital for international companies. An estimate of cost of capital based on local CAPM is based on the assumption that each

EXHIBIT 8.9 Global correlations	
US/UK	0.67
Canada/Switzerland	0.59
Japan/Germany	0.34
Italy/France	0.69
India/Singapore	−0.18
Sweden/South Africa	0.35
Finland/Denmark	0.34

market is segmented from the rest of the world. Using the global CAPM would give more realistic estimates of expected returns for international firms.

The Global CAPM expressed in dollars states that:[5]

$$E(R_\$) = R_{f\$} + \beta_{g\$} \text{ [Global risk premium in dollars]}$$

where $\beta_{g\$}$ = global beta in US dollars measured by regressing monthly data for the target firm against an international index such as MSCI Emerging Markets Data Processing & Reproduction Index (if the target is a software company).

$$R_{f\$} = \text{risk-free rate in dollars}$$

Global risk premium = [return on the global portfolio in US dollar − dollar risk-free rate].

$$= 3\text{--}5.4 \text{ per cent (say 4 per cent)}[6]$$

The dollar rate might be used to discount dollar free cash flows to estimate the value of equity.

The Case of Emerging Markets

In many emerging countries, the stock markets lack depth. More than half the market capitalization is accounted for by a handful of companies. So, the stock market index would be a poor proxy for market portfolio, which is supposed to represent the portfolio of all risky assets held by the marginal investor in the company. The resulting beta estimate would

[5]O' Brien, Thomas. 1999. 'The Global CAPM and a Firm's Cost of Capital in Different Currencies', *Journal of Applied Corporate Finance*, 12(3) Fall.

[6]What cost of equity in Rupee is consistent with the dollar rate obtained from the Global CAPM above? How do you translate the WACC in one currency into WACC in another currency? The answer to these questions is beyond the scope of this book. Interested readers may refer to Tom O' Brien's article mentioned above. Also see Schramm, R.M. and H. Wang, 1999. 'Measuring the Cost of Capital in an International Framework', *Journal of Applied Corporate Finance*, 12(3) Fall.

be biased. The investor, in this case, is a multinational company. As there is no international index,[7] one could use the home country stock market index as the market portfolio. If we assume that the systematic risk of a project in, say Chile, is about the same as that elsewhere, the problem boils down to finding the beta in the home country.

The risk premium for a foreign project could be expressed as:[8]

Risk premium = Base premium for a mature market + country premium

Cost of equity = R_f + β (base premium for a mature market like the US) + country premium

where R_f = T-bond rate, a proxy for risk-free rate.

Base premium is the geometric average premium (that is, $R_m - R_f$) earned by stocks over bonds over a long period of time, 6.1 per cent in the case of the US. The country premium is added on the assumption that country risk cannot be diversified due to cross-market correlation. Put differently, a major portion of the country risk is systematic. The equity risk premium of a country is a function of country default risk and the volatility of the equity market relative to the country bond market.

Country equity risk premium = Country default spread * $[\sigma_{equity}/\sigma_{country\ bond}]$

The country risk can be measured by the credit rating given by international credit-rating agencies like Standard and Poor and Moody's.[9] These agencies publish default spread over T-bond rate and spread over Corporate bonds with similar rating in the US. Exhibit 8.10 presents the Moody's country ratings and the default spread. Either the Corporate spread or the country spread could be used as default risk premium. The default risk premium should be translated into equity risk premium.

Country equity risk premium = Country default spread * $[\sigma_{equity}/\sigma_{country\ bond}]$

where σ_{equity} is the standard deviation of returns on the country's stock market index and $\sigma_{country\ bond}$ is the standard deviation of country bond prices.

Assume the following data:

R_f = T-bond rate in the US = 5.1 per cent

Beta = 0.7

Base premium = 6.1 per cent

[7]We can probably take the Morgan Stanley Capital Index as the best Proxy.

[8]See Damodaran, A. 'Estimating Risk Premiums'. Working Paper, Stern School of Business.

Also see, Godfrey, S. and R. Espinosa. 1996. 'A Practical Approach to Calculating Cost of Equity for Investments in Emerging Markets', *Journal of Applied Corporate Finance*, 9(3) Fall.

[9]See *www.moodys.com* on the net.

EXHIBIT 8.10 Country ratings and default spread		
Country	*Long-term bond rating**	*Country risk premium (per cent)*
Argentina	Ba3	4
Australia	Aa2	0.65
Austria	Aaa	0.00
Belgium	Aaa	0.00
Brazil	B2	5.5
Canada	Aa2	0.65
Chile	Baa1	1.2
China	A3	0.95
India	Ba2	3
Indonesia	B3	6.5
Japan	Aa1	0.60
Pakistan	Caa1	7.5
Sweden	Aa2	0.65
Switzerland	Aaa	0.00

*Spread between interest on foreign currency country bond and that on US corporate bonds with similar rating.

Source: Aswath Damodaran, 'Estimating Risk Premiums', *Working Paper*, Stern School of Business.

Country default spread over the US corporates with same rating = 1.75 per cent

$\sigma_{equity}/\sigma_{country\ bond} = 3.2$

Country premium = 1.75 * 3.2 = 5.6 per cent

Cost of equity for the project = 5.1 + 6.1 + 5.6 per cent

= 16.8 per cent

The cost of equity can be used to discount free cash flow to equity investors to value the project.

GTE, an international telephone company, operates in many countries. To evaluate their investments in overseas markets like Venezuela, different discount rates need to be calculated. To come up with an overseas discount rate, they add a country risk premium to the domestic cost of capital that reflects various country risk ratings, as well as the yields on stripped Brady bonds and sovereign debt.[10] The company uses the second approach outlined earlier for estimating the NPV of the overseas investment.

Avon Products adds a 3 per cent risk premium for investment projects with paybacks longer than three years. The company adds an additional risk premium related to project risk and to sovereign risk.

[10]1996. Bank of America Roundtable on Evaluating and Financing Foreign Direct Investment, *Journal of Applied Corporate Financing*, 9(3) Fall.

Converting Discount Rates

Some academicians suggest that the discount rate be calculated in home currency and then translated to host currency. The conversion of home currency discount rate to host country discount rate involves application of interest rate parity condition. Interest rate parity stipulates that the expected rate of change in the spot exchange rate equals the ratio of the prevailing interest rates in the two currencies.

$$(1 + \Delta s) = \frac{(1 + R_1)}{(1 + R_2)}$$

where Δs = expected change in spot rate.

R_1 and R_2 are yields on comparable government bonds denominated in the currencies in question. The weighted average cost of capital in one currency can be converted into another by multiplying by the expected annual change in the exchange rate. While changes in exchange rates may correspond with changes in the differential in national inflation rates in the long run, there are sharp deviations from this parity relationship for shorter intervals. The inflation rate in many emerging markets is much higher than that in stable economies. So, discounting foreign cash flows with interest rate in that country would be inappropriate. Likewise, managers in low interest rate economies like Japan should not use the Yen rate. This will inflate the NPV of the investment.

Some calculate the discount rate as the sum of interest rate the home government would pay in the host country and a premium that reflects the spread over treasuries the company will have to pay when at home. The average of interest rates over a cycle might be used to discount cash flows. It is important to understand that the interest rate used to discount should be distinguished from the currency borrowed to finance the project, to keep valuation and financing separate.

Thus, the discount rate for a Mexican company that pays 3 per cent over treasuries when at home, for a project in the UK

= Rate at which the Mexican government borrows from the UK + 3 per cent premium.

Financing the Deal

An acquirer can pay for the acquisition in cash or stock. Paying for an acquisition in stock is increasingly becoming popular, especially in the case of large deals in which cash payment is difficult. Exhibit 8.11

EXHIBIT 8.11 Modality of financing, 1995–99				
	No. of deals			
	Developed countries		*Developing countries*	
Year	*Cash*	*Stock*	*Cash*	*Stock*
1995	3,191	39	688	25
1996	3,338	39	855	21
1997	3,700	39	927	18
1998	4,145	39	1,076	13
1999	4,564	39	1,033	9

Source: UN World Investment Report.

presents the details of cash and stock cross-border deals completed during 1995–99.

Concluding Comments

Like domestic acquisitions, cross-border acquisitions usually fail to create value. But this should not discourage companies from expanding overseas. CEOs are usually overly concerned with the differences in national cultures while acquiring abroad. CEOs can enhance the value of cross-border deals by:

- Establishing a clear growth strategy and setting common goals for both the companies.
- Driving cultural change from the top.
- Appointing foreigners on the board.
- Taking all the usual steps one takes in a domestic acquisition.

Appendix: Takeover Code in Select Countries

Important Provisions of French Takeover Laws

1. Subject to a few exceptions, when thresholds of 33 1/3 per cent or 50 per cent are passed or when 2 per cent increments occur over a one-year period–if bidder holds between 33 1/3 per cent and 50 per cent–mandatory offer leading to 66 2/3 per cent must be made to all shareholders.
2. Takeover bids are regulated by a law passed in 1989 and the Stock Exchange Council.
3. In general, there are no nationality restrictions for investments in France.

4. French Labour Law provides that a bidder must inform and consult its unions prior to launching an offer. The Chairman of the target company must similarly inform and consult its unions, once he becomes aware of the offer. The target's union can invite the bidder to explain his intentions.
5. The same price must be paid to all shareholders; however, a lower price may be paid under certain conditions to minority acceptors for dealings in controlling interest.

City Code on Takeovers and Mergers (UK)

The City's code applies to all listed and unlisted public companies, and also some private ones which have had shares listed on the London Stock Exchange within the previous 10 years. It also protects shareholders involved in the bid. The City Code on Takeovers and Mergers was last fully revised and reissued in July 2000.

The code sets out General Principles and is enforced by the Panel on Takeovers and Mergers. The panel is a self-regulating body. However, decisions are subject to judicial review. There may also be some legitimate doubt as to whether the panel's structure is compatible with art.6(1) of the European Convention on Human Rights.

The code's objectives are as follows:

- Equality of treatment of shareholders.
- Equality and sufficiency of disclosure for shareholders.
- Careful and responsible consideration of the terms of the offer by the offeror company.
- Prevention of the creation of false markets.
- Acceptance or rejection of the offer by shareholders of the target without interference of selfish advice by their board of directors.
- Proper organization of persons acting together to ensure that they can all fulfil their obligations under the offer.

The code lays down that:

- The acquirer of 30 per cent of the shares of a company within the code must make an offer to all the holders of voting shares.
- The price at which the offer is to be made is the highest at which the target company's shares have been dealt in by the offeror within the 12 months preceding the acquisition of the 30 per cent stake.

The Substantial Acquisitions Rules are concerned with the speed of acquisition and disclosure requirements where shares (and rights over shares) are required, which confer 15 per cent to 30 per cent of the voting power in a public company whose shares are dealt with on either the London Stock Exchange or the Alternative Investment Market. These rules are enforced by the Panel.

The salient features of the code are discussed here:

1. All shareholders of the same class of an offeree company must be treated similarly by the offeror.
2. During the course of an offer, or when an offer is in contemplation, neither the offeror nor the offeree company, nor any of their respective advisers may furnish information to some shareholders, which is not made available to all shareholders. This principle does not apply to the furnishing of information in confidence by the offeror company to a bona fide potential offeror or vice versa.
3. An offeror should only announce an offer after the most careful and responsible consideration. Such an announcement should be made only when the offeror has every reason to believe that it can and will continue to be able to implement the offer: responsibility in this connection also rests with the financial adviser to the offeror.
4. Shareholders must be given sufficient information and advice to enable them to reach a properly informed decision, and must have sufficient time to do so. No relevant information should be withheld from them.
5. Any document or advertisement addressed to shareholders containing information or advice from an offeror or the board of the offeree company or their respective advisers must, as is the case with a prospectus, be prepared conforming to the highest standards of care and accuracy.
6. All parties to an offer must use every endeavour to prevent the creation of a false market in the securities of an offeror or the offeree company. Parties involved in offers must take care that statements are not made which may mislead shareholders or the market.
7. At no time after a bona fide offer has been communicated to the board of the offeree company, or after the board of the offeree

company has reason to believe that a bona fide offer might be imminent, may action be taken by the board of the offeree company in relation to the affairs of the company, without the approval of the shareholders in the general meeting, which could effectively result in any bona fide offer being frustrated or in the shareholders being denied an opportunity to decide on its merits.

8. Rights of control must be exercised in good faith and the oppression of a minority is wholly unacceptable.

9. Directors of an offeror and the offeree company must always, in advising their shareholders, act only in their capacity as directors and not have regard to their personal or family shareholdings, or to their personal relationships with the companies. It is the shareholders' interests taken as a whole, together with those of the employees and creditors, which should be considered when the directors are giving advice to shareholders. Directors of the offeree company should give careful consideration before they enter into any commitment with an offeror (or anyone else) which would restrict their freedom to advise their shareholders in the future. Such commitments may give rise to conflicts of interest or result in a breach of the directors' fiduciary duties.

10. Where control of a company is acquired by a person, or persons acting in concert, a general offer to all other shareholders is normally required; a similar obligation may arise if control is consolidated. Where an acquisition is contemplated as a result of which a person may incur such an obligation, he must, before making the acquisition, ensure that he can and will continue to be able to implement such an offer.

German Takeover Law[11]

On 1 January 2002, Germany had introduced its first ever takeover code, setting ground rules for companies and investors alike in a country where hostile bids are rare. This section outlines the scope of the Takeover Law, its structure, the provisions concerning a public offer, the specific defensive measures a target company's management may implement and the introduction of the so-called 'squeeze-out' provision.

[11]This is based on Rissel, D. R. 2002. 'Overview of the New German Takeover Law', *Eurojuris Law Journal*, March.

The new German Takeover Law regulates all public offers to acquire certain market-traded equity securities of German domestic companies (whether for stock, cash or a combination thereof with additional provisions to apply where the acquisition or holdings exceed a defined threshold).

The Takeover Law sets are:

- The reporting requirements.
- The criteria for the consideration to be offered.
- The duration of the offer period.
- The conditions under which the target may employ defense tactics against a hostile takeover.

The Takeover Law applies to all public offers where the target is a German-based stock corporation or partnership limited by shares, whose stock is publicly traded on an 'organized market' in Germany or anywhere within the European Economic Area (EEA).

The Takover Law contemplates three sorts of public offers to acquire securities.

The sections of the first main part ('Securities Acquisition', 10–28) apply to all public offers made to stockholders to directly acquire their shares, without regard to the number of shares or the ultimate purpose of the acquisition. A public offer is defined as a publicly announced offer to acquire a target company's stock through purchase or exchange from individual shareholders.

The second part ('Takeover Offers'), also applies if the public offer is submitted with the intent to gain a controlling interest in the target company (defined as 30 per cent of the voting shares). These provisions require the suitor to make a non-discriminatory offer for all the outstanding shares at a minimally acceptable price.

The third part ('Mandatory Offers'), applies when a party, in fact, attains a controlling interest in a company (that is, 30 per cent or more of all voting shares). Pursuant to these provisions, the party is obliged to make a fair and non-discriminatory offer to the remaining shareholders, subject to essentially the same criteria regulating the voluntary takeover offer.

Once a party makes a decision to submit a public offer, it is first obliged to notify the relevant exchange authorities and the Federal Supervisory Office for Securities Trading (hereinafter FSO). It is then obliged to announce the intention to submit a public offer without undue delay, through the officially prescribed methods of publication.

If validly submitting the offer requires authorization by corporate resolution, the offeror may announce the offer as subject to shareholder approval. Apart from that, conditions to the offer, the fulfilment of which lie completely within the control of the offeror (or those acting in concert), may not be set. The offeror may condition the offer on a minimum of acceptances. However, the offeror may not reserve an unconditional right to rescind the offer. Within four weeks of the public announcement of the intention to make an offer, the offeror is required to submit a detailed 'offer document' to the FSO. The offer document must contain sufficient identifying information on the offeror:

- The consideration being offered.
- Effective dates of the offer period.
- Any conditions for acceptance.
- The purpose of the acquisition.
- Means of financing.
- Post-acquisition plans for the target.

In case of cash or combination offers, a certified statement from an independent financial institution—normally an investment bank—confirming that the offeror has secured adequate means of financing to complete the proposed transaction is also required. Only after the document is approved by the FSO, whose decision shall be issued within 10 workdays of submission, the offer document may be publicly distributed. After approval by the FSO, the document must be posted on the Internet without delay and either distributed broadly in print form, free of charge or published in the officially designated financial gazettes. A copy must also be delivered to the target company's management board, which, in response to the public offer, must publish a report containing a thorough assessment of the offer's probability of success, its likely effect on company affairs and a recommendation to the shareholders.

The acceptance period which the offeror determines must be at least four weeks long, and last no longer than 10 weeks. If a competing

offer is issued, or if changes to the original offer are made, automatic extensions will be imposed. If a competing offer is issued, the acceptance period for the original offer will be automatically extended by two weeks. Amendments to the offer may be made until one day prior to its expiration. Such changes may however only be the ones favourable to the target shareholders, such as an increase in the consideration offered, a lowering of the minimum acceptance threshold, or waiver of other conditions. During the offer period, the offeror is obliged to report the number of acceptances weekly, and during the final week, daily, via the Internet, thereby keeping the shareholders informed of current developments. After the original closing date (as well as upon expiration of any extension period), the results must be posted immediately. In case of a limited offer, over-subscription by shareholders will be satisfied strictly on a pro rata basis.

If the offeror initially has the intention to acquire control of 30 per cent or more of the voting shares through the contemplated offer, his offer is defined in 29 as a takeover bid. Takeover bids are subject to the additional requirements set out in 30–40. These provisions require that in a takeover attempt, any offer must be extended to all shareholders in a non-discriminatory manner, and that the consideration offered for the shares be 'reasonable'. 'Reasonableness' of the consideration offered will be determined by the FSO with reference to the weighted average market price over the three-month period immediately preceding the offer announcement, and the price paid by the offeror, or those deemed acting in concert, for any shares acquired over the preceding three months, including non-market packet purchases. Any cash payments must be made in Euros. In case stock is offered wholly or partially for the target's shares, it must be 'liquid', that is, readily convertible to cash, and vested with voting rights. If the offeror has acquired a substantial block of the target's shares (that is, 5 per cent or more) through cash purchase in the three months preceding the announcement of the offer, or has paid cash for any shares subsequent to the announcement to make an offer, he will be obliged to offer cash contribution for the shares yet to be acquired.

An offer, which seeks to acquire more than 30 per cent but is limited to less than 100 per cent of the remaining outstanding shares (a limited offer for control) is expressly forbidden. However, an offer to acquire less than a controlling stake is permitted, provided it does not ultimately

result in control, directly or through others acting in concert, of 30 per cent or more of the target company's voting shares.

If a voluntary takeover offer succeeds in gaining 30 per cent or more of the voting shares, the acceptance period will be extended for another two weeks to allow the remaining shareholders to take advantage of the offer. Shareholders who accept the offer will be entitled to a supplemental matching payment if the offeror subsequently pays higher consideration for similar shares in a non-market transaction within one year following the effective date of the original offer.

Even if there is no intention to take over a company, a shareholder may nevertheless gain direct or indirect control of 30 per cent or more of the voting stock (the percentage includes offeror's subsidiary's holdings in the target, shares held by others for the benefit of the offeror, or shares held by others acting in concert with offeror with regard to the target company). Such shareholder will be compelled to extend to all remaining shareholders an offer similar to that required under a voluntary takeover bid. When the 30 per cent threshold has been reached, the controlling shareholder must publicly disseminate this fact through the supra-regional official financial gazette or an appropriate electronic financial reporting system. Prior to reaching the 30 per cent threshold, however, a shareholder is under no additional obligation to publish the extent of his holdings under the Takeover Law. Within four weeks of publication of a controlling stake, the shareholder has to submit a mandatory offer to his fellow shareholders. If the control of 30 per cent was accomplished through a properly constituted voluntary takeover offer, the acquirer is freed from the duty of announcing his holdings and resubmitting an offer document. Like a voluntary takeover bid, the offer must be 'reasonable' and non-discriminatory, treating all remaining shareholders on equal terms.

The Takeover Law contains an amendment to the German Stock Corporation Act that allows majority holders to acquire minority shareholders' stock via a mandatory cash buyout ('squeeze out'). When a shareholder acquires more than 95 per cent of the voting rights of a company, he is entitled to acquire the remaining shares by compelling the minority holders to sell him their shares for a fair price, strictly in cash, and thus consolidate control in the hands of a single party or group. This demand to purchase must be approved by shareholder resolution at the general shareholders' meeting. The price for the shares is to be

determined by the majority shareholder, taking into account the current circumstances. However, if an offer has been made in the previous six months and has reached a level of acceptance of 90 per cent, this offer's consideration shall serve as a criterion for what constitutes a reasonable offer.

It is important to note that the 'squeeze out' is neither limited to stock corporations nor needs there to be a preceding takeover offer.

Procedure for Takeovers in India

1. Appoint a Category-1 merchant banker to advise on the acquisition.
2. Collection of relevant information on the target.
3. Examine shareholder profile.
4. Investigation of title and indebtedness.
5. Examine articles of association.
6. Public announcement is to be made within four days of finalization of negotiation or entering into an MOU.
7. Make all public announcements in one national English daily, one Hindi newspaper and one regional language newspaper of that place where the shares of the company are listed and traded.
8. The public announcement should contain:

    (a) Identity of the acquirer.
    (b) Purpose of the acquisition.
    (c) Total number of shares proposed to be acquired.
    (d) Offer price.
    (e) Method of payment.
    (f) The highest and the average price paid by the acquirer, if any, to shares of the target company during the 12-month period before the announcement.
    (g) Date of opening and closure of the offer.
    (h) Date by which the payment would be made.
    (i) Details of financial arrangements made for the purpose of acquisition.

9. Prepare a letter of offer with the help of the merchant banker within 14 days of announcement and get it approved by SEBI.

10. Send a copy of the draft letter of offer to the target company at its registered office and to all the stock exchanges where the company is listed.

11. Send the offer letter to all the shareholders of the company whose names appear in the register of members of the company as on the date of public announcement; and the offer letter should reach them within 45 days.

12. Open an escrow account and deposit the required amount as security for performance.

13. Make payment and complete all other procedures within 30 days of the closure of the offer.

14. Upward revision of price can be made any time up to seven days before the closure of the offer.

Salient Features of Securities Exchange Board of India Takeover Regulations

1. Does it cover mergers and amalgamations?
   No. Mergers are covered under Companies Act.

2. Meaning of takeovers and substantial acquisition of shares:
   When an acquirer takes over the control or management of the target company, it is termed as takeover.

3. Persons acting in concert:
   Individuals or companies or other legal entities who are acting in concert for a common objective or for a purpose of substantial acquisition of shares or voting rights or gaining control over the target company either directly or indirectly.

4. Substantial quantity of shares:

   (a) For the purpose of disclosure:
   (i) If holding 5 per cent or more shares or voting rights.
       Should inform the target company within four working days.
   (ii) If holding 15 per cent.
       Shall within 21 days from the financial year ending 31 March as well as the record date fixed for the purpose of dividend declaration, disclose its aggregate shareholding to the target company.

(b) For the purpose of making an open offer by the acquirer:

    (i) If acquiring 5 per cent shares (including existing shareholding), can do so only after making a public announcement to acquire at least an additional 20 per cent of voting rights.

    (ii) An acquirer having 75 per cent shares or voting rights of target company, can acquire further shares or voting rights only after making a public announcement specifying the number of shares to be acquired through an open offer.

5. Control:

Includes the right to appoint majority of directors or control management or make policy decisions.

6. Public announcement (PA):

Announcement in newspapers by acquirer, primarily disclosing its intention to acquire a minimum of 20 per cent shares of the target company. Other disclosures include offer price, number of shares to be acquired from public, identity of acquirer, purpose of acquisition, future plans for the company and so on.

7. Can the acquirer make an offer for less than 20 per cent?

Yes, if the acquirer already holds 75 per cent or more of voting rights.

8. When is the announcement to be made?

The announcement is made through a merchant banker within four working days of entering into an agreement to acquire shares which triggered off the takeover code.

9. Documents to be filed with SEBI after making public announcement:

(a) Draft offer document within 14 days from the date of PA along with filing fees of Rs 50,000.

(b) Merchant banker has to submit a due diligence certificate.

10. Offer document:

The acquirer, through his Merchant Banker, sends the OD and blank acceptance form within 45 days from the date of PA to all the shareholders. The offer remains open for 30 days. The shareholders send their share certificates to the registrar/merchant banker. If accepted, shareholders are to be paid within 30 days.

11. Information to be furnished to stock exchanges:
     Details of the proposed acquisition should be filed with the SE
     where the shares of the company are listed, at least four working
     days before the date of actual acquisition/allotment.

In case of public offers, the copy of the same is to be given to the stock
exchange two days in advance of its issue. Subsequently, upward revision
of the offer/withdrawal has also to be intimated simultaneously.

12. Violation of provision of the regulations by acquirer/merchant
     banker/target company:
     Violation of provision results in suitable penalty/cancellation of
     registration/prosecution.

Takeover Code in Singapore

The Securities Industries Council recently announced the issue of a
revised takeover code, bringing Singapore's takeover regulations more in
line with the regulations in the UK and Hong Kong. The revised code
became effective on 1 January 2002.

The principal features of the code are:

1. The percentage shareholding which triggers an obligation to make a
    mandatory bid has been increased from 25 per cent to 30 per cent.
2. The creeper threshold (allowing a holder of between 30 per cent and
    50 per cent to acquire more shares without triggering a mandatory
    bid obligation) has been reduced to one per cent in any six-month
    period.
3. The mechanism for determining the minimum offer price in a
    mandatory bid has been amended. The minimum offer price must
    now be the highest price paid by the offeree or its concert parties
    within the six months before the offer.
4. The deadline for posting the offer document has been decreased
    from 28 to 21 days after the announcement; and the offer must be
    kept open for at least 28 days, rather than 21 days.
5. Unlisted public companies are exempted from the code, unless
    they have 50 or more shareholders and net tangible assets of at
    least US$ 5 million.
6. A cash alternative for a voluntary offer is now required where the
    offeror acquired 10 per cent of the target shares for cash in the six
    months before the offer and the cash alternative must not be less than
    the highest price paid by such persons in that period of six months.

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Exercise

In 1997, a US multinational requested a 'bulge bracket' Investment Bank to value two of its divisions in Argentina and Brazil. Will Smith, an analyst with the bank, was asked to forecast free cash flow and estimate suitable discount rates for each of these divisions. Exhibit 1 presents the forecast of free cash flow for the two divisions.

EXHIBIT 1 Forecast of free cash flow					
	In US$ '000				
	1998	*1999*	*2000*	*2001*	*2002*
Argentina	6,930	7,117	7,331	7,617	7,990
Brazil	10,920	11,215	11,551	12,002	12,591

EXHIBIT 2			
Subsidiary	*Borrowing rate (per cent)*	*Tax rate (per cent)*	*Target D/V (per cent)*
Argentina	8	35	20
Brazil	12	35	20

Cash flows are expected to grow at 6 per cent per annum after 2002 in perpetuity. The cash flows from local currency were translated into US$ using the estimated exchange rate for each period. The only task remaining is the estimation of discount rate. Smith discovered that the businesses in Latin America had no pure-play proxies. Most of the competitors were subsidiaries of large, diversified companies. So, the determination of beta for each country operation was difficult. In addition, the efficiency of the local stock markets was questionable and so was the estimate of risk premium.

The analyst obtained the dollar borrowing rate, tax rates and target capital structure information from relevant sources. These are displayed in Exhibit 2.

To calculate the cost of equity, the analyst can choose between two approaches under the CAPM method. The first approach involves usage of local CAPM parameters. The second approach involves estimation of parameters (and cost of equity) for the US which would then be adjusted for individual country risk to yield estimates for these subsidiaries. Other relevant data are given below:

Foreign currency debt rating

Moody's		S&P
Argentina	B1	BB–
Brazil	B1	B+

The US treasuries are yielding:

T-bill	YTM (per cent)
1 year	5.92
10 years	6.80
30 years	7.0

Median beta and capital structure information for comparable US industries are given here:

	1	2	3	4
Unlevered median beta[12]	0.86	0.79	0.74	0.76
Mean D/V ratio (market value)	0.2	0.18	0.17	0.19

Refer to other data given in the chapter. Estimate an appropriate discount rate for and the value of each of the divisions.

[12]beta when leverage is zero. The relationship between levered and unlevered beta is: $B_L = B_U [1 + (1 - T) D/E]$.

9

The Empirical Evidence on Mergers

P. Raghavendra Rau

CHAPTER OBJECTIVES

- Highlights the empirical findings on returns to acquiring as well as acquired firms
- Introduction to event studies, a type of empirical research methodology
- Summarizes research on all aspects of mergers

Over the past four decades, mergers and takeovers have been the subjects of extensive research. Every decade, surveys of the literature have summarized the extent of our knowledge in the area. Examples of these surveys include Jensen and Ruback (1983), Jarrell et al. (1988), Agrawal and Jaffe (1999), and Bruner (2002), among others. As the body of merger research becomes more and more extensive, the later surveys focus on specific areas. Agrawal and Jaffe (1999), for example, focus on the long-horizon post-merger stock performance of acquirers in mergers. Bruner (2002) focuses on whether M&A activities create value, especially for the bidding firm. Almost without exception, however, the surveys echo Jensen and Ruback (1983, p. 47) in concluding that the 'knowledge of the sources of takeover gains still eludes us'. After 40 years of research, what do we know about mergers today? There are some well-known stylized facts that are often quoted in the financial press: mergers create value

for target firms, usually destroy value for acquiring firms, diversifying mergers destroy value more than others, mergers occur in waves, and so on. What evidence are these statements based on? In addition, this past decade has seen the largest merger wave in history, as well as some of the largest merger failures. Do these stylized facts still hold true for recent mergers? This chapter will start by discussing the methodology that has been used in empirical research in mergers. Since the surveys cited in the first paragraph discuss empirical research in mergers till the beginning of the last decade, this chapter will focus mostly on research in the past decade and attempt to draw broad inferences as to where the field is heading. Unfortunately, in time-honoured tradition, it will also conclude that we still do not have a clear idea of why mergers happen and why they create value.

Merger Study Methodologies

There have been four major approaches to studying the causes and consequences of mergers. The simplest approach is a survey of executives. These are mostly practitioner studies, many of them carried out by consulting firms such as McKinsey, PricewaterhouseCoopers and so on. Bruner (2002) provides an overview and examples of such surveys. The problem with such surveys is that they are not run as controlled studies. Since the surveys are usually interviews with executives, their views as to the determinants of success and failure of acquisitions may not be related to the economic value created by the acquisition. Moreover, since no attempt is made to control for objective factors that have been shown to influence the success or failure of acquisitions, it is difficult to conclude anything from these studies. Take, for example, a (typical) survey by Coopers and Lybrand, which examines 124 US companies in a variety of industries in 1996. Each of the companies, with average revenues of US$ 1.4 billion and 6,400 employees, had executed a merger or an acquisition during the previous three years. The survey concludes that the speed of completing a deal has a direct bearing on its success. According to the report,[1]

[1]See 1997. 'Success Goes to the Swift, Study Indicates'. *Mergers & Acquisitions Report*, July.

Accepted wisdom is that acquisitions differ so much by industry and participant that they defy any common analysis. But one variable is common to all deals–the speed at which integration of the acquirer and the target occurs,' Coopers stated. 'The most compelling single finding of the survey was that, by a margin of nine to one, acquirers wish they could have conducted the transition period more quickly. Firms that followed a fast-track strategy reported achieving over 80 per cent of their objectives. Firms following a more go-slow approach reported a failure rate approaching 50 per cent.

In this study, none of the parameters being examined are objective. It is difficult to even determine the direction of causality. Perhaps, slow-to-integrate firms were firms that had more difficulty with the integration and *a priori* might have been expected to have a greater probability of failure.

The second approach to studying mergers is the clinical case study. These studies explore particular mergers in depth, usually through extensive field interviews with the executives involved. Many of these studies often produce new insights. In 1996, for example, the National Bureau of Economic Research commissioned in-depth case studies of a small number of mergers (see Kaplan, 2000). These studies revealed that the economic environment surrounding mergers is far too rich to be captured by large sample studies. However, clinical studies also suffer from the same defect that surveys do. While they are more objective than surveys, it is still difficult to get insights into the costs and benefits of the merger process in general.

The third and fourth approaches are related. The third approach, and by far, the most common approach, is the event-study approach. An event study measures the effect of some company-specific information on the price of securities of the company or on its operating performance. Event studies have been used to study the stock price performance of acquiring and target firms in the immediate period around the merger announcement date to five years after the completion of the merger. They have also been used to study the accounting/operating performance of the merged firms in the years surrounding the takeover. Since this method is so commonly used, it is worthwhile to spend some time considering its advantages and disadvantages. Perhaps, the first published paper using

the event-study methodology was Dolley (1933). This paper examines the price effects of stock splits in a sample of 95 splits between 1921 and 1931.

Over the next two decades, this methodology increased in sophistication until the first modern event studies were developed in papers such as Ball and Brown (1968) and Fama, Fisher, Jensen and Roll (FFJR) (1969). Ball and Brown investigate the information content of earnings, while FFJR study the effects of stock splits after removing the effects of simultaneous dividend increases. Since then, the basic event-study methodology has not changed.[2]

In a standard event study, a sample of firms is collected where all the sample firms have experienced a common event such as a merger. The event date is defined as the day or month of the announcement (or completion) of the event in a widely disseminated publication such as the Wall Street Journal or more commonly, the Dow Jones News Retrieval Index. The event firms are then lined up in event time and an event period is defined between $-t$ periods before the event date and $+t$ periods after the event date. On each day or month of the event period, the return for each security is computed from time $-t$ to $+t$. A benchmark is used to compute what the returns to the event firms would have been if the event had not been announced. Then, the abnormal returns (also called excess returns or residuals) are computed by subtracting these 'normal' returns from the returns realized by the firm. These abnormal returns are then averaged across all firms in the sample and finally cumulated over the $-t$ to $+t$ period to obtain a cumulative abnormal return (CAR).

One of the primary assumptions made in the event study is the correct benchmark model of normal returns. The parameters of this model are usually estimated using data outside the event period $-t$ to $+t$. Hence, the two choices that have to be made are that of the correct model to be used and the relevant estimation period to estimate the parameters of the model. To estimate the *ex-ante* expected return, among the most common methods in the literature have been the mean adjusted return method, the market-adjusted return method, the market model residual method, CAPM residual method, the empirical market line method and the comparison portfolio method.

[2]A detailed survey of the event-study literature can be found in MacKinlay (1997).

The mean-adjusted return method assumes that the expected rate of return for security i is the average rate of return to the security in a hold-out period. This method assumes that the expected rate of return is constant over time and ignores contemporaneous market information. The market-adjusted return method assumes that the expected rate of return for the security is the expected return to the market; so the abnormal return eit, conditional on observing the market return, Rmt is equal to $Rit - R_{mt}$. This method ignores differences across securities, but incorporates contemporaneous market movements. It also raises the additional issue of the choice of market index to be used.

The market model residual method assumes that returns are generated by the market model

$$Rit = \alpha_i + \beta_i R_{mt} + eit$$

where αi and βi are estimated in the estimation period so that

$$eit = Rit - \alpha_i - \beta_i R_{mt}$$

This method recognizes the differences between securities and incorporates contemporaneous market information. The CAPM residual method is very similar. It assumes that the conditional expected rate of return is given by $Rft + \beta_i(R_{mt} - Rft)$, where βi is estimated in the estimation period so that

$$eit = Rit - (Rft + \beta_i(R_{mt} - Rft))$$

It incorporates the differences between securities, contemporaneous market information and contemporaneous interest rate information. It assumes that the CAPM holds, an assumption that is being increasingly challenged in the literature.

The empirical market line model (also called the Fama–MacBeth residual method, after Fama and MacBeth (1973)) estimates beta of all securities in the market, using five years of monthly data. These securities are then sorted in order of beta into 20 portfolios. The next five years are used to re-compute the betas of the 20 portfolios. From year 11 onwards, each month, a cross-sectional regression is run on the returns to each portfolio.

$$Rp = \alpha 0t + \alpha\ it\ \beta p + np$$

The abnormal return *eit* is then equal to $Rit - \alpha 0t - \alpha\ it\beta_{it}$, where the β_{it} are estimated using past data. The procedure is then repeated every year until the end of the sample period. Mandelker (1974), probably the first formal event study of mergers, uses this approach. Mandelker analyzes 241 mergers over the 1941–62 period, where both the acquiring and the target firms were listed on the New York Stock Exchange (NYSE), using the Fama–MacBeth residual method.

Finally, the comparison portfolio method ranks all stocks according to their beta and forms 20 portfolios. The excess return is then the difference between the return and the return to the portfolio with the same beta. A variant of this procedure ranks stocks according to size into five size-sorted portfolios and within each portfolio, into five book-to-market-based portfolios, so that we obtain 25 size B/M portfolios. Depending on the model of expected returns, other conditioning variables (such as industry) have also been used to form the comparison portfolios. In another variant of this procedure, an individual matching firm is picked instead of a matching portfolio. This matching-firm approach brings its own attendant issues, such as how to deal with a delisting of the matching firm and so on.

Note that all these methods assume that the parameters of the return generating process are not influenced by the event. In many cases, we may have reason to believe that this is not a good assumption. For example, targets in takeover bids may become less risky after an announcement (beta falls) because after the announcement, the company's stock price is largely driven by speculation about the outcome of the takeover, which is largely unrelated to market events, especially in a cash offer.

The event-time methodology is conceptually simple, theoretically well-grounded and easy to execute. It is no wonder then that event studies have dominated the field since their inception. Using appropriate benchmarks, event studies have been used to measure both the stock price and operating performance, of acquirers, targets and the combined entity, both in the short and the long run.

The major weakness of the event-study approach is that the inferences drawn from it are always joint hypotheses–that the event earns abnormal returns and that the benchmark used provides the right measure of 'normal' returns. Event studies require significant assumptions on market efficiency, rationality of market participants and no limits on arbitrage.

It is reasonable to argue that these assumptions are fulfilled for most stocks on an average, especially in the short run. Long-run event studies–that measure abnormal performance over a period of years after the event– are more vulnerable to these criticisms. Brown and Warner (1980, 1985) discuss the issues involved in estimating short-horizon event studies using monthly and daily data, respectively. Barber and Lyon (1997), Kothari and Warner (1997) and Lyon et al. (1999) discuss the issues involved in estimating long-horizon event studies. Finally, Barber and Lyon (1996) discuss issues in estimating abnormal operating performance.

The final approach is a variant of the event-study approach. Here, event firms are lined up in calendar time. An event portfolio is formed each period to include all companies that have completed the event in the prior *n* periods. Then, the performance of this event portfolio is tracked over time relative to an explicit asset-pricing model or some other benchmark. This approach was first used by Jaffe (1974) and Mandelker (1974). The advantage of this method is that the cross-sectional correlations of the individual firm returns are accounted for in the portfolio variance at each point in calendar time.

To summarize the discussion so far, the typical approach to computing the economic effect of mergers is to compute abnormal returns (in the short or long-term), form hypotheses about the factors that should explain these returns and regress the abnormal returns on these factors. In addition, some studies also examine subsequent company performance using earnings or managerial or earnings forecasts. Taking this methodology as given, therefore, the rest of the chapter will summarize the empirical results on mergers. As mentioned in the introduction, the focus will be on research over the last decade.

Empirical Research on Mergers

Over the past four decades, several major strands of merger research can be identified. In this section, I will touch upon recent research that examines the following questions:

- Who wins and who loses in mergers?
- In computing the gains to bidders and targets, what is the impact of
  - Acquisition method: Merger or tender offer
  - Means of payment: Stock or cash

- Attitude of the transaction: Hostile or Friendly
- Regulation
- Ownership and governance structure: Managerial ownership, institutional holdings, bidder toeholds
- Nature of the industry

• Why do acquirers acquire?
• What are the characteristics of potential targets?

Note that this is by no means a comprehensive list. Other topics that I will not touch upon include the role of financial intermediaries in mergers, the determinants of merger waves, the effectiveness of takeover defenses, the value of corporate voting rights, and so on. Most empirical research in mergers has focussed on the sources of gains to merger participants; so this section will start by examining the source of merger gains as well.

Who Wins and Who Loses in Mergers?

There are several parties who are affected by a merger. In addition to the bidder and the target shareholders, these include managers, bidder and target bondholders, preferred shareholders and other firms in the same industry. Over the past three decades, empirical research on merger gains has tended to focus on bidder and target shareholders. The almost uniform conclusion is that target shareholders earn positive returns. In contrast, the results on bidder returns are more controversial. Some studies suggest that bidders earn zero or perhaps even negative returns. Other studies have documented these results as being sensitive to issues of methodology. Since the results on bidder and target gains from acquisitions are exhaustively reviewed in the surveys cited in the introduction, I will not discuss the individual studies here, but focus more on the sources of the gains.

Returns to Targets

In a survey of the evidence till 1983, Jensen and Ruback (1983) document that target shareholders in successful acquisitions tend to earn abnormal returns of around 20 per cent in mergers and 30 per cent in tender offers. In unsuccessful acquisitions, on an average, they do not lose. Bruner (2002) summarizes the evidence from 21 studies between 1978 and 2001 and documents gains of between 7 per cent and 126.9 per cent to target

shareholders over periods ranging from 120 days before the acquisition announcement up to five years after the completion of the acquisition. Target shareholders, therefore, gain from acquisitions.

Returns to Acquirers

As mentioned earlier, the returns to acquirers are more controversial. These studies can typically be classified into short- and long-horizon studies. Short-horizon studies typically examine periods less than a year in length immediately around the announcement date, while long-horizon studies examine periods ranging up to five years after the completion of the acquisition.

Jensen and Ruback (1983) report returns to shareholders in acquiring firms of 4 per cent in tender offers and 0 per cent in bidders in the short horizon around the announcement date. This conclusion that bidders tend to earn low returns has not changed greatly over the following two decades. Bruner (2002) reports the results from 20 short-horizon studies over the period 1978–2001 which find negative returns to bidding firms, ranging from one to three per cent. Thirteen of these are significantly negative. However, he also reports the results from 24 studies over the same period, which find positive returns to bidding firms, with 17 of these being significantly positive. Overall, therefore, in the short-term, bidders do not seem to either gain or lose from acquisitions.

Agrawal and Jaffe (1999) review 22 studies that have examined bidder returns in the long-term up to five years after the completion of an acquisition. They document that acquirer shareholders in tender offers do not lose (and earn significantly positive abnormal returns in two studies), but acquirer shareholders in mergers earn significantly negative abnormal returns. This conclusion is robust to a wide variety of statistical techniques, and is documented over a long time period, in both the US and the UK. There is not much recent research on post-merger performance following failed bids, but older research seems to suggest negative bidder returns following such bids.

As mentioned in the first section of this chapter, these long-horizon results are sensitive to methodological issues and are more controversial than those from short-horizon studies. While it is tempting to argue that the long-term abnormal performance documented is simply an artefact of the methodology, the similar results obtained from a wide variety of

statistical tests, periods and countries make it difficult to argue that there is nothing there.

One reason why these returns might persist is due to practical limits on arbitrage. Baker and Savasoglu (2002) construct risk arbitrage positions for 1,901 cash and stock merger and acquisition offers over the 1981–96 period. Each position is designed to provide a fixed payoff if the deal is successfully completed according to its original terms. They argue that excess returns to these positions, around 0.6–0.9 per cent per month, are due to practical limits on risk arbitrage. The risk-bearing capacity of arbitrageurs, who might be expected to drive the price to the correct value, is constrained by deal-completion risk and the size of the position they hold.

Returns to Bidders and Targets Combined

A third strand of research examines whether mergers create any economic value. Since the bidders are usually much larger than targets, the large stock returns to targets documented here could be easily offset by a small loss to bidder shareholders, and the merger as a whole could destroy economic value. Bruner (2002) surveys 20 studies that examine this issue either by forming a value-weighted portfolio of the bidder and target firms or by examining the absolute dollar value of the returns. Almost all these studies report positive returns to bidder and target shareholders together. Over half of them report significantly positive returns.

Overall, therefore, M&A activity is economically valuable. Most of the gains, however, seem to go to target shareholders. Why are the gains to bidders so small? There are several explanations. Bradley et al. (1988) suggest that the bidder market is competitive and that this one-sided competition wipes out bidder gains. Bruner (2002) concludes that the zero abnormal returns earned by bidders means that bidder shareholders do earn a normal risk-adjusted return. Other researchers (see for example, Asquith et al. (1983)) have suggested that this is simply an artefact of the relative size of the bidder and the target. There is also an asymmetric information effect–investors will rationally mark down the prices of firms that announce an acquisition if they interpret this as a lack of growth opportunities within the firm. Managers of bidding firms may be driven by non-value maximizing objectives such as the need to diversify. Morck et al. (1990) find that returns to bidding shareholders are

lower when their firm diversifies, when it buys a rapidly growing target and when its managers performed poorly before the acquisition. Finally, market inefficiency may mean that we need to look at the long horizon before the effect of the merger is fully incorporated into bidder stock returns. Some of these explanations are considered later in the section on motivations for acquisitions.

Returns to Rivals

A number of authors (see for example, Eckbo (1983), or Mitchell and Mulherin (1996)) find that rivals of acquisition targets earn significant positive abnormal returns. One explanation is that horizontal mergers increase the probability of successful collusion among rival producers. Under this collusion hypothesis, rivals of the merging firms benefit from the merger, since successful collusion limits output, raises product prices and/or lowers factor prices. However, this explanation has never found any empirical backing.

An alternative explanation, tested by Song and Walkling (2000) in a sample of acquisition bids in 1982–91, suggests that rival firms earn abnormal returns because of the increased probability that they will become targets themselves. They find that, on an average, rival firms earn positive abnormal returns regardless of the form and outcome of acquisition. These returns increase significantly with the magnitude of surprise about the initial acquisition. The cross-sectional variation of rival abnormal returns in the announcement period is systematically related to variables associated with the probability of acquisition.

Alternatively, the announcement of a merger might signal information regarding an innovative use of capital or a productivity increase that can be exploited by rival firms regardless of whether they are involved in a merger. Akhigbe et al. (2000) distinguish this hypothesis from the Song–Walkling acquisition probability hypothesis, by examining terminated bids. The acquisition probability hypothesis suggests that a terminated merger would lead to an increase in the probability for a rival receiving a bid, while the productivity increase hypothesis would suggest no additional post-termination abnormal returns for the bidders. Consistent with Song and Walkling, they find that termination results in significant negative returns for targets and significant positive returns for rivals, supporting the hypothesis that rival firms could become acquisition targets.

Returns to Bondholders and Preferred Shareholders

Suppose the assets of an acquirer are not perfectly correlated with the assets of the target firm. Kim and McConnell (1977) argue that when the two firms combine, the reduction in asset variance caused by the merger will result in an increase in the value of target debt (from the reduction in the probability of default). If this wealth transfer from the target and acquirer bondholders is too large, the shareholders of the two firms may be reluctant to complete the acquisition.

However, Kim and McConnell and other authors (such as Dennis and McConnell (1986), Travlos (1987), Maquieira et al. (1998), among others) find that non-convertible bondholders of bidding firms neither gain nor lose from mergers. Dennis and McConnell also analyze the rates of return and dollar value returns for various classes of merging firms' securities and find that target convertible and non-convertible preferred stockholders, and convertible bondholders gain in the merger, as do the acquirers' convertible preferred stockholders. Similarly, Maquieira, Megginson and Nail examine wealth changes for 1,283 publicly-traded debt and equity securities of firms involved in 260 pure stock-for-stock mergers in the 1963–96 period. They find no evidence that conglomerate stock-for-stock mergers create financial synergies or benefit bondholders at stockholders' expense. Conglomerate bidding-firm stockholders lose; all other security holders at least break even. Convertible security holders experience the largest gains, due mostly to their attached option values. Certain bond covenants are value-enhancing, while leverage increases are value-reducing.

Factors Affecting Gains in Acquisitions

Acquisition Method: Merger or Tender Offer

Research seems to document that returns to targets are smaller in mergers than in tender offers. One reason for this might be that mergers tend to be friendly. Since there is less scope for drastic restructuring and potential value creation after the merger, we might expect lower returns for targets in mergers. Van Hulle et al. (1991) find that in a sample of Belgian mergers, target board members continue to own 33 per cent of the board seats one year after the merger. In contrast, in tender offers, the figure is 13 per cent.

An alternative explanation is that since mergers are predominantly paid for in shares, the merger or tender offer effect may simply be a proxy for the means of payment. One reason for tender offers being predominantly cash financed in the United States is that, a cash-financed tender offer is subject only to the 1968 Williams Act. Upon filing the appropriate documentation with the Securities and Exchange Commission and after complying with the required waiting period, the offer may commence. Stock-financed offers must comply with the Securities Act of 1933, which can lead to a substantial delay. Franks and Harris (1989) examine over 1,800 UK takeovers in the period 1955–85. They find that target gains are higher in the UK after 1968, suggesting that increases in the US target gains at the same time may not be attributable to the Williams Act.

Ultimately, though authors have postulated reasons why mergers are different from tender offers (means of payment, degree of hostility and such others), the reason for the substantial difference between mergers and tender offers is still unclear. The final answer may be a combination of all these factors. As Agrawal and Jaffe (1999) document, authors increasingly treat the two forms of transactions as different and analyze them separately.

Method of Payment: Stock or Cash

There are several reasons why choice of stock or cash payments may influence the gains from a merger. The first reason is taxes. Payment with shares is tax-efficient relative to cash payments. Hence, stock bidders may have to compensate targets for the higher tax liability. Hayn (1989) finds that even after controlling for the degree of competition for the target, management opposition to the deal, the method of acquisition and the relative size of bidder to target, the tax attributes of target firms are significant in explaining the abnormal returns to shareholders of both target and acquiring firms following acquisition announcements. The most prominent tax attribute in tax-free acquisitions is the amount of net operating loss carry forwards and tax credits due to expire. The most important tax attribute in taxable acquisitions is the step-up in the acquired assets' basis. Hayn also finds some evidence that tax considerations motivate acquisitions in that obtaining tax-free status for the proposed acquisition increases its likelihood of completion.

The second reason that stock-financed acquisitions perform worse than cash-financed acquisitions is an asymmetric information effect. In a Myers and Majluf (1984) type framework, rational investors will interpret a stock payment as evidence that the firm's shares are overvalued and will hence mark down the prices of firms that announce a stock-financed acquisition relative to a cash-financed acquisition. Alternatively, paying with cash might increase the bidder's leverage, signalling that the managers have lower available free cash flow. Travlos (1987) analyzes a sample of 167 successful mergers and tender offers in 1972–81 where payments were made either purely in stock, in cash or a mixture of the two. He finds that after controlling for the type of acquisition, bidder shareholders in pure stock-financed acquisitions earn significant negative abnormal returns on the announcement date, while bidder shareholders in cash-financed acquisitions do not lose.

A third reason for the differential performance between stock and cash-financed acquisitions focuses on the role of asymmetric information about the bidder's or the target's value. Hansen (1987) derives a theoretical model where the bidder is uncertain about the target's value and uses stock to share the risk that the acquirer may have overpaid. Fishman (1989) adds bidder competition to this model and demonstrates that cash may not only signal a high value for the target, but also pre-empt other firms from bidding. Choe et al. (1993) show that an increase in overall economic activity increases the likelihood of stock financing and argue that this is because firms face lower adverse selection costs, more promising investment opportunities and less uncertainty about assets in place. Martin (1996) uses size and growth opportunities to proxy for the uncertainty in bidder and target values, and finds that the bidder and target investment opportunities are important determinants of the method of payment, though bidder size is not related to payment method.

Attitude of the Transaction

In the academic literature, many researchers have distinguished between hostile and friendly takeovers in that the gains from hostile takeovers result from replacing incumbent managers and the gains from friendly takeovers result from strategic synergies. Schwert (2000) examines whether hostile takeovers can be distinguished from friendly takeovers,

in a sample of 2,346 takeover contests in the 1975–96 period, based on accounting and stock performance data. Schwert uses several different definitions of hostility–the deal was classified as hostile in the WSJ Index or in SDC, if the deal was an unnegotiated tender offer, if a 13D statement was filed in the year before the initial bid in which the buyer discloses an intent to seek control, or a combination of these. He finds that most deals described as hostile in the press are not distinguishable from friendly deals in economic terms. Poor target management, proxied for by variables such as ROE and M/B ratio, does not predict the likelihood of a hostile deal. There is some evidence that bidders identified as hostile, based on pre-bid events, earn lower stock returns, though other definitions of hostility do not show a relationship.

Regulation

In the US, the major law governing the choice of acquisition form is the 1968 Williams Act. The Williams Act and its amendments mandate that bidding firms must file reports with the SEC, describing their business plans relating to the target firm and method of financing the acquisition. The Act also contains provisions that increase target management's ability to block or delay tender offers by bringing suits in court. Several hypotheses have been advanced as to the effects of this Act on takeover activity. If the Act reduces takeover activity, and then if there are close substitutes to tender offers, the Williams Act would not have any important effect on the acquisitions market. A second hypothesis deals with the increased disclosure requirements associated with the Williams Act. Public disclosure might serve to inform other public bidders about the profit opportunity and give them time to enter competitive bids. This competition places upward pressure on the offer premiums and transfers some returns from acquirer to target shareholders. However, if the regulations simply truncate the distribution of takeovers that actually occur by eliminating the less profitable takeovers, then this would reduce the returns to firms that do not become takeover targets and increase the measured average abnormal returns to targets of completed takeovers.

Malatesta and Thompson (1993) model the acquisition process and the effect of the Williams Act on both the expected gross present value of an acquisition attempt and the marginal cost of an attempt. They reject the substitution hypothesis, since the parameters in their acquisition

model change significantly around the time the Williams Act is passed. Though they cannot reject the truncation hypothesis using conventional tests, a Bayesian framework yields a higher posterior probability for the transfer hypothesis than the other two. Cash-financed acquisitions, under the Williams Act, involve fewer delays than acquisitions using stock as consideration. Consistent with this, Martin (1996) finds that bidders are more likely to use a cash-financed tender offer to pre-empt the competition when real or potential competition for the target exists.

Other papers examining the effect of regulation on takeover activity have focussed on the effect of state anti-takeover laws, such as the 1990 Pennsylvania Senate Bill 1310, containing five provisions designed to make takeovers prohibitively expensive, but allowing firms to opt out of some or all of the law's provisions. Some authors have examined the effect of disclosure requirements in different countries. Van Hulle et al. (1991), for example, find that the lack of disclosure requirements in Belgium does not benefit bidders.

Ownership and Governance Structure: Managerial Ownership, Institutional Holdings, Bidder Toeholds, Board Structure

This is a complex issue. Managerial ownership can affect negotiation power and can align managerial and shareholder interests. Institutional ownership can affect the tax status of the marginal investor–pension funds with lower taxes on capital gains might be willing to sell at a lower cost. It can also affect the degree of monitoring of managers and the resulting concern for shareholder value. It can affect the outcome of offers–pension funds have to balance their fiduciary responsibilities against loyalty to management. Finally, institutional ownership can also help in overcoming free-rider problems. Bidder toeholds can affect the negotiation power of the two parties, the degree of monitoring of target firm managers, the extent of policy change and can also help in overcoming free-rider problems.

Numerous studies have examined these issues in isolation and together. There is usually a positive relationship between managerial ownership and target/acquirer returns. For example, Amihud et al. (1990) report significantly negative bidder returns for stock–financed acquisitions, but only for those bidders with low management ownership. Martin (1996) finds a non-linear relationship between the use of stock payments and

managerial ownership in the firm. The probability of stock financing is reduced in the presence of higher institutional blockholdings. Betton and Eckbo (2000) find that toeholds are largest in successful single-bid contests and smallest in multiple-bid contests. Bidders also pay smaller premiums when they already own a lot of shares. One interpretation of this is that it is easier for them to convince small shareholders that they have an incentive to overpay. *Ceteris paribus*, the probability of a successful offer is higher if the bidder has a large toehold. Target gains decrease with the size of the initial bidder's toehold, because the larger the toehold, the greater the probability of the low target payoff in the single-bid outcome. Interestingly, as Betton and Eckbo document, in spite of the benefits of bidder toeholds, a high proportion, around 47 per cent, of the initial bidders in their sample of 1,353 tender offers in the 1971–90 period, do not purchase a toehold.

Nature of the Industry

Several studies have examined bidder and target returns in specific industries. Acquisitions in regulated industries typically require regulatory approval. However, *a priori*, it is difficult to predict what this would imply for bidder or target returns. This requirement for regulatory approval raises the cost of a takeover, so that acquirers are likely to pursue only the more profitable acquisitions. Since managerial improvement is one motive for takeover, we might expect greater pre-acquisition under-performance for targets in regulated industries than in other industries. Alternatively, managerial discretion may be lower in regulated industries. This implies lower pre-takeover underperformance for targets in regulated industries.

As one example, the regulatory process for bank takeovers is very different from non-bank takeovers. Before a bank takeover can occur, prior approval is required from one of the three federal bank regulatory authorities (the Federal Reserve Board, the Federal Deposit Insurance Corporation and the Comptroller of the Currency). In addition, approval at the state level is also required. Finally, after approval is granted, there is a 30-day waiting period so that the Justice Department can examine the takeover.

Houston and Ryngaert (1994) find that the overall gains (the weighted average of gains to the bidder and the target firms) in a sample of bank

mergers are slightly positive, but statistically indistinguishable from zero. In the longer term, Madura and Wiant (1994) measure the abnormal performance of banks subsequent to their acquisitions of other banks, and find a strong negative share price reaction following the acquisition, which tends to continue over a 36-month period. The long-run valuation effects across the acquiring banks are higher for banks that made acquisitions within their existing markets, experienced relatively poor pre-acquisition performance, and had relatively low pre-acquisition growth. DeLong (2001) classifies mergers of banking firms according to activity and geographic similarity (focus) or dissimilarity (diversification), and examines the abnormal returns to each group as a result of the merger announcement. She finds that mergers which focus both activity and geography enhance stockholder value by 3.0 per cent, while the other types do not create value. Cornett et al. (2003) extend DeLong's study by examining if the abnormal returns to focussing bank acquisitions can be related to corporate governance mechanisms (such as CEO share and option ownership and a smaller board size). They find that these variables in the bidding bank are less effective in explaining abnormal returns in diversifying acquisitions than in focussing acquisitions. For example, the greater the equity stake (either through stock or options) of the CEO in the bidder bank, the greater the proportion of outsiders on the board; the older the CEO and the fewer the number of directors on the board, the greater the announcement period abnormal return. These results are generally consistent with the findings for industrial firms.

Why do Acquirers Acquire? Motives for Acquisitions

Acquirers choose to acquire targets for many reasons. From an economic efficiency perspective, bidders initiate mergers to create value. Value can be created in several ways. Good managers may acquire poorly performing firms and create value by firing target management and improving target operating performance. Financial synergies may be present between the bidding and the target firms. If the market is inefficient and undervalues the target, then correctly valued bidders can acquire targets cheaply and create value. If the bidder is overvalued by the market, the bidder can pay for the acquisition using overvalued stock. Horizontal mergers may increase the market power of the combined firm and enable it to extract monopoly rents.

Alternatively, managers may be focussed on their own self-interests. They may be interested in mergers to maximize firm size instead of shareholder value. Maximizing firm size increases job security because a hostile takeover is less likely in a large, rapidly growing firm, increases bidder managers' own powers, statuses and salaries, and creates more opportunities for lower-and middle-level managers at the bidding firm.

Finally, managers may make errors. Even if bidder management is focussed on maximizing shareholder value, for example, managers may overestimate their own ability to manage acquisitions, making bids out of hubris. Alternatively, they may be focussed myopically on ratios such as earnings per share. Some of these reasons are discussed in the next section.

Creating Value: Improving Managerial Efficiency

The popular press and academic literature cites the desire to improve poorly-performing firms as a major factor motivating takeovers. A number of papers have examined the hypothesis that target firms are poor performers. They do this in several ways. Some authors have examined the Q-ratios of acquired firms prior to the takeover. A second approach is to estimate pre-takeover abnormal performance at either target or acquirer and compare it to post-takeover abnormal performance. A third approach is to predict the probability of takeover from the performance of the target firms, using past returns, financial ratios (such as P/E, Tobin's Q or M/B), or operating performance. Since the third approach is discussed in the section on 'target characteristics', I will not discuss it here. The final approach involves examining turnover at the target firms. If the managers at the target firms are poor, then we might expect to find increased turnover at these firms after the takeover. The results are ambiguous. While there is some evidence that mergers do result in an increase in performance, there is also evidence of the opposite conclusion.

Lang et al. (1989) and Servaes (1991) find that the shareholders of low Q targets benefit more from takeovers than the shareholders of high Q targets. Target Q ratios decline significantly over the five years before the tender offer. Target, bidder and total returns are higher when the targets have low Q ratios and bidders have high Q ratios, lending support to the inefficient target management hypothesis. Consistent with this, Mitchell and Lehn (1990) show that firms which make poor acquisitions that

significantly reduce their equity value subsequently become takeover targets themselves. 'Good' acquirers, on the other hand, make value-increasing acquisitions and are significantly less likely to become targets.

In contrast, however, Clark and Ofek (1994) examine a sample of distressed firms that were acquired. To find distressed firms, they examined all acquisitions listed on Mergerstat Review between 1981 and 1988 to find firms with market-adjusted returns of –15 per cent or less in the year prior to the takeover, or market-adjusted returns of –45 per cent or less in the three years prior to the takeover. News releases about these firms were then examined to find indications of restructuring attempts (such as management turnover, reduction in dividends, lay-offs, asset restructuring, debt downgrading and so on). They use different measures (such as EBITD/revenues, excess market returns, industry-adjusted returns and so on) of the performance of the combined bidder and target firms, but are unable to find evidence that bidders are able to successfully restructure targets.

Linn and Switzer (2001) examine the relationship between the change in operating performance of merging firms and whether the acquiring firm offered cash or stock as the method-of-payment. They find that the change in performance of the merged firms is significantly larger for cases in which the acquiring company offered cash as compared to stock offers. The results are not sensitive to whether the combination involved a tender offer or a negotiated merger, to offer size, industry relatedness between the bidder's and the target's businesses or bidder leverage.

Barber and Lyon (1996) advise that empirical tests of operating performance adjust for size, industry and past performance. This may be important for mergers, since acquiring firms undertake acquisitions following a period of superior performance and they are generally larger than industry-median firms. Using firms matched on performance and size as a benchmark, Ghosh (2001) finds no evidence that operating performance improves following acquisitions. Consistent with Linn and Switzer, he also finds that cash flows increase significantly following acquisitions that are made with cash, but decline for stock acquisitions.

Finally, in the most comprehensive study to date, Agrawal and Jaffe (1999) examine the operating and stock performance of over 2,083 target firms in the 1926–96 period to test the inefficient target management hypothesis. They find no evidence of pre-takeover, underperformance for

the target firms, using either operating or stock returns. This result also holds for sub-samples of takeovers that are more likely to be disciplinary (such as tender offers, hostile takeovers and multi-bidder contests).

Merger bids may, however, be able to create value simply because the bid acts as a wake-up call to poor target managers. Consistent with this, Safieddine and Titman (1999) find that targets which terminate takeover bids become better firms. They significantly increase their leverage ratios, on an average. Targets that increase their leverage ratios the most also reduce capital expenditures, sell assets, reduce employment, increase focus and realize cash flows and share prices that outperform their benchmarks in the five years following the failed takeover. In other words, the increase in leverage acts as a signal that the target firm is committed to making the improvements which would be made by potential raiders.

Mergers may also create value if acquirer managers are superior managers. Heron and Lie (2002) investigate this issue in a large sample of firms that conducted acquisitions between 1985 and 1997. They examine the relationship between the method of payment in acquisitions, earnings management, and operating performance for the acquirers in their sample. Prior to their acquisitions, acquirers exhibit levels of operating performance that exceed that of their respective industry peers. Subsequent to acquisitions, acquirers continue to exhibit superior performance relative to their industry and experience significantly higher levels of operating performance than control firms with similar pre-event operating performance. They find no evidence that the method of payment conveys information about the acquirer's future operating performance.

Martin and McConnell (1991) examine what happens to target management once a takeover happens. If corporate takeovers discipline the top managers of poorly-performing target firms, the turnover rate should increase post-takeover. They find that the turnover rate for the top manager of target firms in tender offers significantly increases following completion of the takeover and that prior to the takeover, these firms were significantly under-performing other firms in their industry as well as other target firms which had no post-takeover change in the top executive. In contrast, Franks and Mayer (1996), who examine board turnover in hostile takeovers in the UK in 1985 and 1986, find evidence of high board turnover and significant levels of post-takeover

restructuring. However, they find no evidence of poor performance prior to bids, suggesting that the high board turnover does not derive from past managerial failure. They conclude that hostile takeovers do not perform a disciplining function. Instead, rejection of bids appear to derive from opposition to post-takeover redeployment of assets and renegotiation over the terms of bids.

Overall, we cannot unambiguously conclude that mergers create value by improving management or operating performance at target firms.

Creating Value: Financial Synergies

Synergies can be an important motive for a merger. Operating synergies between firms include the enhanced distribution of complementary product lines, lower operating overheads by consolidating personnel and accounting departments or improve economies of scale and scope in product lines. Financial synergies arise when a high-growth and cash-poor firm is acquired by a cash-rich bidder. Using accounting data, Smith and Kim (1994) classify bidders as 'high free cash flow' or 'slack poor'. Consistent with the financial synergy hypothesis, they find that bidder, target, and total returns are highest for acquisitions that combine slack-poor and free cash flow firms. They also find that negative returns of bidders are concentrated among combinations where bidders and targets are similarly classified. Bidder returns are more positive when associated with capital structure and liquid asset changes that mitigate bidder slack or free cash flow problems.

Creating Value: Diversification

At first sight, diversification might not appear to create any value for shareholders since shareholders can diversify more cheaply on their own. However, diversification may still be beneficial because employees and managers cannot diversify their human capital. They may be willing to accept a lower salary or a larger commitment to the company if they take less risk. Ultimately, therefore, diversification may benefit shareholders.

Contrary to this hypothesis, Morck et al. (1990), in a sample of 326 US acquisitions between 1975 and 1987, find that the returns to bidding shareholders are systematically lower when their firm diversifies.

Servaes (1996) examines the diversification wave of the 1960s and the 1970s. If diversification benefits shareholders, diversified companies should be valued at a premium during this period when many corporations started to diversify. However, he finds no evidence that diversified companies were valued at a premium over single-segment firms during the 1960s and the 1970s. On the contrary, there is a large diversification discount during the 1960s that declines to zero during the 1970s.

Looking at the other side of the coin, Comment and Jarrell (1994) document that greater corporate focus is consistent with shareholder wealth maximization in the 1980s and large focussed firms are less likely to be subject to hostile takeover attempts than other firms.

Creating Value: Timing

If managers act on behalf of their shareholders, then managers who perceive their firms' shares to be overvalued should issue shares, either as a seasoned equity offering or a stock-financed acquisition. Inefficient investors will under-react to the information in the stock-issue announcement and the overvalued firm managers may be able to create value for their shareholders. There is some evidence that managers time the market when issuing shares. Baker and Wurgler (2000), for example, find that firms issue relatively more equity than debt just before periods of low market returns.

Consistent with this, Loughran and Vijh (1997) examine 947 acquisitions during 1970–89, and report a relationship between the post-acquisition returns and the mode of acquisition and form of payment. During a five-year period following the acquisition, on an average, firms that complete stock mergers earn significantly negative excess returns of –25.0 per cent whereas firms that complete cash tender offers earn significantly positive excess returns of 61.7 per cent. Over the combined pre- and post-acquisition period, target shareholders who hold on to the acquirer stock received as payment in stock mergers do not earn significantly positive excess returns. In the top quartile of target-to-acquirer size ratio, they earn negative excess returns.

Dong et al. (2002) (DHRT) examine the relationship between irrational market valuation, the volume of takeovers and the behaviour of participants in takeover contests. Since, as mentioned earlier, post-event

abnormal returns are controversial, DHRT use the book/price (B/P) ratio and the ratio of residual income valuation to price (V/P) as contemporaneous measures of mis-valuation for bidders and of targets. They find that the mis-evaluation of bidders, targets, and the aggregate stock market influences the aggregate volume of takeovers, the means of payment chosen and the premiums paid. Overvalued acquirers are more likely to use stock as consideration, and are willing to pay more in such transactions.

In an interesting twist to this idea, Chang (1998) studies announcement period bidder returns when the target firm is privately held. Bidding firms offering stock in an acquisition may be faced with the asymmetric information problem of Myers and Majluf (1984). A stock payment in a merger will consequently result in negative abnormal returns. If the bidder is correctly valued (as opposed to being overvalued), it would like to signal this information to the target firm managers, a task that may be easier with private targets. Chang finds, in contrast to the negative abnormal return typically found for stock-financed bidders acquiring a publicly traded target, stock-financed bidders bidding for a private firm earn a positive abnormal return. In cash offers to private targets, bidders do not earn abnormal returns in cash offers.

Other Methods of Creating Value: Undervaluation and Market Power

These issues have been discussed elsewhere in this chapter; so I will only briefly discuss them here. In contrast to the timing hypothesis, the undervaluation hypothesis postulates that inefficient markets may undervalue the target, especially for small companies that are not followed by analysts or the popular press. In such cases, acquirers could create value by buying up undervalued companies and selling them when the market realizes their correct value. If this was the main explanation however, the stock prices of target companies in unsuccessful bids would stay up. The empirical evidence is inconsistent with this.

Horizontal mergers may increase the probability of successful collusion among rival producers. This limits output and raises product prices and/or lower factor prices, increasing monopoly type rents to merging firms. As discussed in the section 'Returns to rivals', however, this explanation has never found any empirical backing.

Managerial Self-Interested Behaviour: Free Cash Flow

Jensen (1986) argues that the agency conflict between owners and managers is severest in the presence of free cash flows, cash flows above those needed to make payments to stakeholders and fund positive NPV projects. Managers, acting in their own self-interests, may choose to spend this cash rather than returning it to their shareholders. Acquisitions are one way they can spend their free cash flow.

One likely set of bidders with free cash flow are cash-rich firms. Harford (1999) examines whether the presence of excess cash in a firm leads managers to make value-decreasing acquisitions. He examines a sample of attempted mergers and acquisitions between 1950 and 1994, and documents that cash-rich firms are more likely than other firms to attempt acquisitions. Acquisitions by cash-rich firms are value-decreasing–cash-rich bidders destroy seven cents in value for every excess dollar of cash reserves held. They are more likely to make diversifying acquisitions and their targets are less likely to attract other bidders. Mergers in which the bidder is cash-rich are also followed by abnormal declines in operating performance.

Managerial Errors: Hubris

Roll (1986) argues that successful bidders in acquisitions are subject to a winner's curse. The distribution of bidder valuations is truncated below by the target true value–we will not see acquisitions where the target believes itself to be worth more than the bid. Hence, on an average, bidders will pay too much for their acquisitions.

Rau and Vermaelen (1998) argue that managers as well as other decision-makers, who have to approve an acquisition (such as large shareholders and the board of directors) indirectly receive feedback on the quality of the bidder's management from the market. In companies with low book-to-market ratios ('glamour' firms), managers are more likely to overestimate their own abilities to manage an acquisition, that is, they will be infected by hubris. Such glamour firms are firms with high past stock returns and high past growth in cash flow and earnings, which should presumably strengthen the management's belief in its own actions. Moreover, in these firms, other stakeholders, such as the board of directors and large shareholders are more likely to give the management

the benefit of the doubt and approve its acquisition plans. On the other hand, in companies where the management has a poor track record, such as companies with high book-to-market ratios ('value' stocks), managers, directors and large shareholders will be more prudent before approving a major transaction, which may well determine the survival of the company. Because these acquisitions are not motivated by hubris, they should create shareholder value rather than destroy it. According to this performance extrapolation hypothesis, the market only gradually reassesses the quality of the bidder as the results of the acquisition become clear. In other words, the market (as well as the management, the board of directors and large shareholders) extrapolates too much the past performance of the bidder manager when it assesses the value of an acquisition. Hence, while in the short-run, that is, around the announcement of the acquisition, glamour bidders will experience higher abnormal returns than value bidders, in the long run this performance will reverse.

Rau and Vermaelen find that value bidders far outperform glamour bidders in the three years after the completion of the merger or tender offer, with value acquirers earning statistically significant size and book-to-market adjusted positive abnormal returns of 8 per cent in mergers and 16 per cent in tender offers. Glamour acquirers on the other hand, earn statistically significant size and book-to-market adjusted negative abnormal returns of –17 per cent in mergers and insignificant abnormal returns of 4 per cent in tender offers. This finding that value bidders outperform glamour bidders is remarkably robust. The conclusions are unchanged when they exclude small acquisitions, when they exclude NASDAQ bidders or when they exclude periods when events are clustered.

Hayward and Hambrick (1997) directly examine the role of a CEO's hubris in explaining the large size of some premiums paid for acquisitions. In a sample of 106 large acquisitions, they find that four indicators of CEO hubris are highly associated with the size of premiums paid: the acquiring company's recent performance, recent media praise for the CEO, a measure of the CEO's self-importance, and a composite factor of these three variables. The relationship between CEO hubris and premiums is further strengthened when the board has a high proportion of inside directors and when the CEO is also the board chair.

Managerial Errors: EPS Myopia

Rau and Vermaelen (1998) postulate that bidding firm managers might be myopically focussed on earnings per share (EPS). Merging with a company with a lower price-earnings ratio than the buyer's and paying for the acquisition by shares may inflate the buyer's EPS. Managers find it easier to justify an acquisition if it is accompanied by an EPS increase rather than a decrease. In fact, there is a widespread belief that companies should not acquire others with higher price-earnings ratios than their own (see Brealey and Myers (1996), pp. 921–923). Consequently, managers might be willing to pay higher prices (and possibly overpay) for target firms if the acquisition results in an increase in earnings per share. For each merger in their sample, Rau and Vermaelen compute the difference between the actual growth in the bidder's EPS following the merger and the estimated growth if the merger had not taken place. They find no significant relationship between the impact of the merger on the EPS and the subsequent long-run performance of the bidder.

What kind of Target are Acquired? Target Characteristics

What kind of firms are potential targets in takeovers? The papers that attempt to answer this question usually employ a logistic probability model to examine the probability that a firm will be the target of an acquisition attempt. The regression model is of the type

$$Pit = 1/[1+e^{-\beta x(i,t)}]$$

where Pit is the probability that firm i is the target of a takeover bid in the period t, $x(i,t)$ is a vector of explanatory variables for firm i at time t and β is the unknown parameter vector.

Target Size

Palepu (1986) hypothesizes that firms with poor performance are more likely to be acquisition targets, as potential bidders can acquire them and easily increase value. He analyzes the probability that an acquisition is completed, using several financial performance ratios including the market-to-book ratio, the price-earnings ratio, return on equity, and sales growth. He also analyzes the effect of leverage, and size. Firms with low leverage may have latent debt capacity that acquirers can use to finance the acquisition. Larger firms may be less likely to be taken over since the

financing costs to acquire a large firm may be prohibitive. Moreover, the cost of integrating a large target into the acquirer increases with target size. Consistent with the hypotheses, Palepu finds that smaller firms and firms with low leverage are significantly more likely to be targets. Oddly, he also finds a negative relationship between industry takeover activity and the probability of the acquisition.

In contrast, Mikkelson and Partch (1989) find that while large firms are less likely to be acquisition targets, leverage has no effect on the likelihood of a takeover. Ambrose and Megginson (1992) extend the Palepu model by incorporating measures of insider and institutional shareholdings, and by considering the effect of varying proportions of fixed (tangible) assets in a firm's total asset structure, in a random sample of firms in non-regulated industries listed on the NYSE or Amex on 1 January 1981. Consistent with Palepu, they find that smaller firms are more likely to receive a takeover bid. However, the explanatory power of the Palepu model is reduced in their sample period. In addition, the probability of receiving a takeover bid is positively related to tangible assets, and negatively related to the net change in institutional holdings.

Comment and Schwert (1995) examine a sample of exchange-listed target firms in the 1975–91 period. They find that target firms have below-average sales growth, higher cash positions, lower market-to-book ratios and lower debt-equity ratios, suggesting that target firms are poor performers making inefficient use of their financial capital. The lower market-to-book ratios may be evidence that targets have fewer growth options and more assets in place. Alternatively, they may simply be undervalued firms.

Overall, size seems to be the most successful predictor of takeover probability across all the studies. The other variables, sales growth, leverage, M/B ratio, Q ratio, all have shown mixed results.

Target Leverage

The mixed results on the relationship between leverage and the probability of takeover may, in fact, partly be due to the co-insurance effect, discussed earlier. Billett (1996) examines this co-insurance effect for a sample of 448 non-financial and non-regulated firms, listed on CRSP and Compustat with data on credit ratings. He finds that as the co-insurance potential of a firm's debt–measured as the amount of relatively risky debt outstanding–increases, its likelihood of being acquired decreases. This co-insurance

deterrent is period-specific, however it is strongest during the 1985–90 period and is strongest for firms with public debt outstanding.

Target Ownership Structure

Jensen and Ruback (1983) describe the takeover market as a market where alternative managerial teams compete for the right to manage corporate resources. According to this view, the shareholders of the firm do not actively control the company, hiring and firing managers depending on their performance. Instead, management teams are the active players with shareholders playing a relatively passive role. Investment banks, takeover specialists and arbitrageurs facilitate the takeover market by acting as financial intermediaries.

Another important factor therefore, that determines whether a firm is a potential takeover target may be managerial ownership. The effect of managerial ownership on takeover activity, however, is unclear. Increased managerial ownership aligns the incentives of managers with shareholders. Morck et al. (1988) (MSV) and McConnell and Servaes (1990) (MS) document that firms with a high level of managerial ownership also have higher levels of Tobin's Q. This may reduce the probability that these firms are taken over since there is less evidence that a new management team will add incremental value to the firm. However, MSV and MS also document that the relationship between Tobin's Q and managerial ownership is non-linear. At high levels of managerial ownership, the relationship becomes negative as managers become increasingly entrenched. This degree of entrenchment may make poor managers better able to resist a takeover. Finally, increased managerial ownership may also result in higher takeover premiums, as managers can bargain more effectively with potential acquirers.

Mikkelson and Partch (1989) examine managers' holdings in a random sample of 240 industrial firms, and test whether the degree of managerial ownership affects the probability of a takeover attempt being made for the firm. Though they find that the likelihood of successful acquisitions of firms is unrelated to target managerial holdings, this lack of a relationship is caused by two opposing effects. Lower managerial ownership is associated with a higher probability that a firm will receive a takeover offer, but a lower probability that a takeover attempt will lead to a change in control. Song and Walking (1993) examine a sample of

153 target firms in acquisitions announced in the *WSJ* between 1977 and 1986. They contrast managerial ownership for this sample with two other samples of 153 industry-matched or randomly selected non-target firms respectively. They find that managerial ownership is significantly lower in their target firms in comparison to the non-target firms. Within the sample of target firms, managerial ownership is lower in contested compared to uncontested offers, and in unsuccessful compared to successful cases. Shivdasani (1993) finds that size, managerial stockholdings and affiliate firm cross-shareholdings are negatively related to the likelihood of a hostile takeover.

Anti-Takeover Defenses

In addition to managerial ownership, another way to keep control of the firm may be for target managers to use anti-takeover laws. Ambrose and Megginson (1992) also examine the deterrent effect of various takeover defenses, such as the presence of classified boards, fair charter provisions, dual-class capitalization, poison pills, or blank-check preferred stock authorizations. They find that blank-check preferred stock authorizations are the only common takeover defense significantly (negatively) correlated with acquisition likelihood.

The problem with drawing conclusions from a simple correlation between the presence of a takeover defense is that managers may choose to implement the takeover defense only when takeovers are likely. This will mask the relationship between the effectiveness of the defense and the likelihood of takeover. In an extreme case, we may observe a positive relationship between the presence of a takeover defense and the likelihood that a company is acquired, suggesting that pills cause the takeover. Comment and Schwert (1995) use a two-stage approach to mitigate this problem. In the first stage, they estimate a model to predict poison pill coverage, using variables such as incorporation in a state with an anti-takeover law, size, sales growth and liquidity. This gives them predictable and surprise elements of pill coverage. The surprise component is likely to be the pills adopted when managers have information about a pending takeover attempt. The second stage then uses these two components separately in a probit regression on a takeover dummy and a pill-adoption dummy. They find that poison pills and control share laws are positively associated with higher takeover premiums for selling shareholders, both

unconditionally and conditional on a successful takeover. They conclude that anti-takeover measures increase the bargaining position of target firms, but they do not prevent many transactions. Consequently, poison pill rights issues, control share laws, and business combination laws do not systematically deter takeovers.

One unusual kind of anti-takeover defense may be observed in unionized firms. Firms with different unionization statuses may be reluctant to merge from fear that the non-union partner in the merger might end up unionized. Wruck and Stephens (1992) note that when Safeway sold off its Dallas division, non-union buyers did not want to hire Safeway employees because they were afraid of getting their operations unionized. This 'contagion' effect, can be balanced against a 'threat' hypothesis. The management of a unionized target firm can use the threat of merging with a non-union firm to extract concessions from its unions. Fallick and Hassett (1996) explore whether unionization influences the decision of a firm to merge with another firm. They find that unionization increases the likelihood that a firm will enter the acquisition market and that firms with similar union statuses tend to merge with one another.

Concluding Comments

This chapter has attempted to provide a broad overview of the empirical research in mergers over the last three decades. It is by no means comprehensive. Some conclusions can be drawn—target firm shareholders seem to earn significantly positive returns, acquirers seem to earn zero or negative returns, bond-holders do not seem to be hurt and rivals may be benefitted. Firms acquire other firms for a variety of reasons—to improve target management, out of hubris, to take advantage of their own overvaluation, to diversify and so on. Many of these results are controversial. Studies in different time periods, different countries or different statistical methods yield contradictory results. There is still much to learn.

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10
Takeover Defenses

Sharon Hannes

CHAPTER OBJECTIVES

- Highlights the different anti-takeover defenses
- Summarizes the empirical findings on the impact of takeover defenses on shareholder value

Introduction

Unsolicited control transactions, otherwise known as hostile takeovers, became prevalent in the 1980s. The unique and defining feature of a hostile takeover is that the board of directors of the firm to be acquired opposes the proposed transaction. Thus, in order to overcome this opposition, the bidder must appeal to the shareholders of the corporate target. While the takeover wave of the 1980s was not the first wave of takeovers in the US and the 'market for corporate control' was famously described much earlier in the seminal work of Henry Manne,[1] it was certainly the fiercest wave. During the 1980s, an unbelievable 30 per cent of the Fortune 500 companies were subjected to takeover bids.[2]

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[1]Henry Manne. 1965.'Mergers and the Market for Corporate Control'. *The Journal of Political Economy*, 73: 110.

[2]Gerald D. and S. Stout. 1992. 'Organization Theory and the Market for Corporate Control: A Dynamic Analysis of the Characteristics of Large Takeover Targets, 1980–90'. *Administrative Science Quarterly*, 37: 605, 608.

By law, directors are either elected or dismissed from office by the shareholders' votes, which takes place at certain times or upon certain events and in certain forms. However, if a bidder can successfully acquire a majority of shares of the target firm, it would only be a question of time before she would use the voting mechanism to replace the opposing directors. In practice, therefore, following a successful takeover, the incumbent directors tender their resignation without waiting for the inevitable vote.[3] For this reason, the voting mechanism was left virtually untouched by the hostile takeovers of the early 1980s.

Subsequently, however, innovative legal devices which were eventually upheld by landmark judicial precedents, permanently altered the landscape on which hostile takeover battles were waged.[4] In order to impede hostile market transactions, corporate targets implemented a garden variety of anti-takeover manoeuvres. At the peak of such manoeuvres, corporate attorneys crafted shareholder rights plans which were notoriously referred to as 'poison pills'. Under the terms of such plans, the purchase of a significant portion of stock without the board of directors' approval triggers special rights for incumbent shareholders.[5] As a result, the value of a hostile purchase could be so severely diluted as to defeat any possible benefit of the takeover to the acquirer.[6] Moreover, because these plans to protect shareholder rights are, as per the discretion of the board, distributed as in-kind dividends, shareholders' approval is not required in order to implement the harsh measures which of course facilitate adoption thereof. The seminal Delaware court decision in *Moran* and subsequent litigation legitimized the use of these poison pills, despite their potential for conflict between the shareholders and the directors. This marked the end of pure market transactions as the possible means for achieving hostile takeovers.

[3]John C.Coates. 1999. Measuring the Domain of Mediating Hierarchy: How Contestable are US Public Corporations?, *The Journal of Corporation Law*, 24: 837, 850.

[4]*See* the seminal case of Moran V. Household Int'l, Inc., 500 A.2d 1346 (Del. 1985).

[5]See Ronald, J. Gilson. and B.S. Black. 1998. *The Law and Finance of Corporate Acquisitions*, *747* (2nd edition).

[6]*See* Wachtell, Lipton Rosen and Katz. 1998. *The Share Purchase Rights Plan*, reprinted in Gilson & Black, *id* 4–12 (2nd edition).

Nevertheless, the development and the judicial approval of the poison pills could not stop the lively market for unsolicited control transactions, since it did not temper the vote or proxy mechanisms of targeted firms. Thus, even if there is a poison pill, a bidder can solicit the votes of the shareholders in order to replace an incumbent board. The new directors can then move on to remove the poison pill since 'poison pills can be removed by a board of directors as easily as they can be installed',[7] thereby allowing the bidder to proceed to purchase stock. The voting process may, therefore, circumvent the effects of a poison pill if it is not accompanied by any other defensive mechanism. Interestingly, the voting mechanism, which was initially designed to allow changes in corporate control, regained its leading role during the era of the poison pills.[8]

Although poison pills certainly made hostile takeovers much more expensive, the out-of-pocket costs of soliciting shareholders' votes are not the primary deterrent to hostile takeovers. The power of the poison pill lies in the extremely costly delay it creates. Because market values fluctuate rapidly, deals that can be concluded without delay are of much greater value than those that cannot. Moreover, because takeover activity engages the bidder's management, significant opportunity costs are created. Finally, the longer it takes to conclude a deal, the greater the risk to the bidder of competition from other potential bidders. As a result, if the process of replacing the board of the targeted firm takes longer time than that necessary for a pure tender offer, then the effect of the poison pill becomes far more salient.

Surprisingly, however, this need not be the case. If, for example, a majority of the shareholders can quickly dismiss an incumbent board without cause and nominate a new board via written consent (without holding a meeting), then the process should not consume much more time than would have been spent had an offer been tendered in an ordinary takeover. Moreover, and rather surprisingly, this is precisely the default

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[7]Coates, *supra* note 3, at 852.

[8]The market mechanism to allow for such commitment is a contingent tender offer that is held in conjunction with the proxy fight for the board. In short, this is a simultaneous offer to replace the management of the company and buy its shares. *See* Harold, M. and A. Poulsen. 1998. 'Proxy Contests and Corporate Change: Implications for Shareholders Wealth', *Journal of Financial Economics*, 47: 279, 286.

standard established, since proxy fights may be concluded within 45 days. Hence, a poison pill by itself does not allow managers of a defending target much time to rescue their sinking positions.[9]

There are, nevertheless, delaying tactics that can be taken in order to strengthen the power of the poison pill. Unlike the poison pills, the adoption of which lies solely within a board's discretion, delaying the shareholders' votes beyond the legal default must ordinarily be implemented with the shareholders' approval. However, in the second half of the 1980s, as illustrated by the work of Karpoff and Danielson, managers easily obtained shareholder consent for various delaying mechanisms.[10]

In our short survey of takeover tactics, we shall start with the various defenses that led to the invention and legitimization of the poison pill. We shall then move forward to discuss takeover defenses that impede the efficacy of the voting mechanism, since this mechanism is the most attractive alternative available to hostile bidders in the era of the poison pill. Thereafter, we shall discuss defenses that are deployed following a bid or when a bid is pending. The discussion shall also include the various legal standards that are used by the courts in their scrutiny of anti-takeover defenses. Finally, we shall wrap up the discussion with novel data about defenses and suggest future avenues for research.

Defenses that make the Purchase of the Target's Shares Less Attractive

Defensive Transactions and Restructuring

While this chapter emphasizes legal tactics that are meant to avert a takeover, many defensive steps are actually business rather than legal manoeuvres. Some of these manoeuvres are highly beneficial for the shareholders, at least in the short run. The threat of a takeover may cause the management to cut costs, sell unneeded assets and run the firm more efficiently. These measures may drive up the value of the enterprise and make the takeover attempt less attractive to the bidder. Even after a

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[9] *See*, Robert C. and W. Schwert. 1995. 'Poison or Placebo? Evidence on the Deterrence and Wealth Effects of Modern Anti-takeover Measures', *Journal of Financial Economics*, 39: 3.

[10] *See*, Karpoff J.M. and M.G. Danielson. 1998. 'On the Uses of Corporate Governance Provisions', *Journal of Corporate Finance*, 4: 347, 354, table 2.

takeover attempt has been launched, the target's management may imitate the proposed agenda of the bidder, thus proving the shareholders that value shall be created even without accepting the bid.

Another class of transactions or restructuring may prove harmful for the shareholders. For instance, the management may overload the balance sheet with debt, thus reducing the potential of the firm to pay dividends in the future. Alternatively, management may sell major assets of the company, or even the company's '*crown jewel*', to a third party at less than the market price. The reduction in the value of the corporation and the loss of attractive assets may cause bidders to lose interest. A variant of the destruction-of-value tactic, which is even more effective, is value destruction that is keyed to the success of the takeover. For example, the incumbent management may persuade customers or suppliers to declare that they shall not co-operate with the bidder since they are loyal to the incumbent managers.

Another frequently used tactic is defensive acquisitions. The mere fact that the target acquires other entities or merges with them may make the corporation harder to acquire, but usually does not block the acquisitions. After all, following the takeover, the raider may divest the corporation from the acquired assets. However, some acquisitions may cause regulatory hurdles, such as anti-trust concerns for the bidder, though a commitment to divest certain assets may overcome this barrier as well.

The 'Pac-Man' Defense

This exotic defense that is infrequently used is a particular defensive acquisition. The acquisition that the target is contemplating is the acquisition of the bidder itself, and it must be accomplished before the bidder consummates the purchase of the target. The tactic is therefore possible only when the bidder itself is a widely-held corporation. In a famous example, Martin Marietta countered Bendix tender offer, by making its own bid for Bendix stock.[11] And, since both bids were successful, it was hard to figure out which entity controls the other. The confusion was finally resolved in an agreement between the parties.

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[11] Deborah DeMott, *Pac-Man Tender Offers*, 116 Duke L. J. (1983).

White Knights and Friendly-Block Holders

Empirical evidence shows that only a minority of targeted firms is able to overcome a takeover bid and remains independent. However, not all the rest of the takeover attempts are successful from the point of view of the bidder. Often, the target's management is able to solicit a third party, a '*White Knight*', to counter-bid and overcome the hostile bidder. The downside of this manoeuvre is that the company is sold to such third party and forgoes the independence. The management preference for the white knight may be a matter of personal resentment to the hostile bidder or the result of various benefits that the white knight offers them, either in terms of employment or in terms of severance compensation.

Another possibility is to place a substantial portion of the company stock in the hands of a friendly party. Such party may help the management to avert a bid while maintaining the target's independence. Finally, in some cases, in the face of a hostile bid, management issues shares to employee stock ownership trusts, knowing that the trustee will support the incumbent managers. When the issuance is made on the eve of a takeover attempt or during a takeover battle, courts are highly suspicious with such practices.

Impediments to Second-Step Transactions:
Supermajority and Fair Price

In a majority of hostile takeovers, the bidder intends to conduct a second-stage transaction in which the bidder merges with the target and freezes out the minority shareholders who did not tender their shares in the first stage. The merger between the bidder and the target combines the assets of the two entities, allowing the bidder to secure the loans it took to finance the takeover with the assets of the acquired firm.

Therefore, interference with the second-step transaction (whether it is a freeze-out merger or other similar transactions) may serve as a takeover impediment. Since all states require a shareholder's vote to approve a merger, all that is needed to interfere with such a transaction is to add a charter provision, a s*hark repellent* amendment which requires a supermajority for the approving vote. Common supermajority approval rates run as high as 95 per cent of the shareholders' votes. And since

the incumbent officers of the corporation usually hold some portion of the stock, such supermajority requirement may become a meaningful obstacle. The shark repellent amendment is usually accompanied by another charter provision which states that the shark repellent amendment may only be removed from the corporate charter by a supermajority vote. Otherwise, it would be easy for the bidder, following the first stage of the takeover, to nullify the shark repellent amendment. The downside of this tactic, as well as any other shark repellent charter amendment, is the fact that an amendment to the corporate charter requires the approval of both the board of directors and the shareholders meeting.

Another familiar shark repellent charter provision that is aimed to impede second-step transactions is the fair price provision. Such provisions state a minimal price requirement (stated numerically or by a formula) for a second-step freeze-out transaction. In some cases, the fair price provision states a price which is higher than the price in the first-stage tender offer. In these circumstances, the shareholders may hold out and refrain from tendering their shares in the front end of the takeover, thus preventing the takeover altogether.

Compulsory Redemption Charter Provisions

Another shark repellent charter provision, which is less common, is the compulsory redemption charter provision. The compulsory redemption charter provision is the complimentary of the charter provisions which impede a second-step transaction. Sometimes the bidder is not interested in buying the entire target and aims merely to purchase control, while minimizing the cost of the acquisition. The compulsory redemption charter provision grants a put option to any minority shareholder, following a takeover, to sell its holdings to the company, and thus eliminates the privilege of the bidder to state the maximal portion of the target that it wishes to acquire. Moreover, the compulsory redemption charter provision states the redemption price. In the event that the redemption price is higher than the price offered in the tender offer, shareholders would once again hold out and refrain from tendering their shares to the bidder in the tender offer.

Dual-Class Recapitalization

A highly-potent takeover defense that is now prohibited by the exchanges regulation is the dual-class recapitalization. The idea is to alter the capital structure of the firm in a manner that would leave the public shareholders with shares that have inferior control right. There are quite a few ways to manipulate the shareholders to achieve this goal. For instance, the management may declare a stock dividend of a new type of shares with multiple votes whose voting rights are suspended for a few years each time the share is traded. Since public shareholders trade frequently, the managerial team that normally sticks to its holdings strengthens its control over the company. This effect is highlighted by the fact that trading frequency usually peeks once a takeover is launched since market professionals gather stock. Another tactic that aims to reach the same goal is a charter amendment that reduces the voting power of the corporation's common stock upon trading.

One way or the other this type of defensive tactics is currently prohibited by exchanges regulation. It is still possible to prevent takeovers altogether by going public with a dual-class stock structure in the first place. However, studies show that firms that go public with dual-class stock structures suffer from a sharp value discount and therefore only a few companies opt for this option.

Poison Debt and Control Clauses

Control clauses in contracts between the corporation and its suppliers and first and foremost, its suppliers of capital ('Poison Debt') may serve as an anti-takeover impediment. For instance, the contract's provisions can state that the lender may accelerate the loan upon the change of control or may raise the amount of interest charged. Similar provisions may appear in the agreements with other suppliers and major customers. Moreover, and even without such control clauses, an enterprise loaded with much debt may become takeover resistant, since the debt capacity of a corporation is limited and the bidder may need that capacity to serve the loans which are needed to finance the takeover.

Stock Repurchases to Strengthen the Managerial Holdings

When the target corporation has a significant block of insider shareholders who are loyal to the management, their stance can be enhanced by a buyback of the target stock. Such a manoeuvre would be usually achieved by a self-tender offer of the target to some percentage of its own stock, and at a higher price than the one offered by the pending or the expected hostile bid. Ideally, the loyal shareholders would not tender their stock in the self-tender offer and therefore enhance their power. If their holdings were substantial in the first place they might be able, following the defensive stock repurchase, to block the hostile bid, or at least block some major corporate transactions by the bidder in the case where such transactions require a supermajority vote. The self-tender offer is much less-effective when the management does not have a substantial loyal body of shareholders to start with. Nevertheless, even under these circumstances, the self-tender offer may cause the hostile bidder to raise its offer.

Golden Parachutes

Another practice which is commonly regarded as a takeover defense is the *Golden Parachutes* granted to the incumbent officers of the target. The golden parachute is simply a generous severance payment award that is granted upon an unsolicited change of control. The amount awarded usually does not run higher than 3 times the annual wages of the relevant officer. Beyond this limit, the internal revenue code does not allow the corporation to deduct the severance payment as an expense, while the office has to pay a 20 per cent excise tax.

In any case, it is doubtful if the popular golden parachute is a takeover impediment at all. Firstly, rarely would the total payments under the firm's golden parachutes top a couple of percentage of the market value of the firm.[12] Secondly, golden parachutes are said to align the interests of managers and shareholders and may convince the managers to approve a takeover which they would otherwise oppose.[13]

[12]Richard, L. and D. Larker. 1985. 'Golden Parachutes, Executive Decision-Making, and Shareholder Wealth', 7 *Journal of Accounting and Economics* 179.
[13] Charles Kroeber. 1986. *Golden Parachutes, Shark Repellents, and Hostile Tender Offers,* 76 *American Economic Review* 155.

The Flip-Over (Non-Discriminatory) Poison Pill

The voice of institutional investors, which became louder and louder in the 1980s opposed some managerial defensive manoeuvres. Managers of potential targets therefore looked for an effective takeover technique that did not require shareholders' approval. Defensive transactions which do not require shareholders approval are costly for the firm, consume managerial time and interrupt the day-to-day operations of the firm. The invention of the poison pill, crafted as a shareholders' right plan whose only operation is to deter bids, filled the need. It is especially designed to block a takeover without interfering with the operations of the firm and is entirely within the discretion of the board of directors.

The first generation of poison pills introduced the flip-over poison pills. Similar to charter provisions that are aimed to block a second-step transaction, the flip-over poison pill did not target the purchase of stock by the bidder, but rather the bidder's ability to merge with the target in a second-stage manoeuvre. As explained earlier, potential bidder that cannot merge with the target may lose interest in the target altogether. The flip-over shareholder's right plan is triggered when the bidder, who already purchased a substantial portion of the target stock, merges with the target (or otherwise combines the operations of the two firms). The pill may also be triggered if the bidder sells a substantial portion of the firms' assets.

Once triggered, the shareholders' rights 'flip over' and become the rights to buy common shares of the bidder at a discount (usually half the market price). The flip-over poison pill is a non-discriminatory poison pill in the sense that the bidder itself enjoys the right to purchase its own stock, like the other shareholders of the target. However, the bidder suffers from a substantial dilution once the rest of the target shareholders exercise their rights.

While the flip-over poison pill has many advantages, it is still far from perfection as an anti-takeover mechanism. In some cases, the bidder may do equally well without combining its business with the target, and therefore never trigger the pill. In other cases, such as the takeover of Crown Zellerbach by Sir James Goldsmith in 1985, the bidder may launch a tender offer and then negotiates with the management on the second-step transaction. The incumbent board of directors always preserves the power to redeem the pill as it wishes to allow friendly transactions.

The Flip-In (Discriminatory) Poison Pill

The flaws of the flip-over poison pill brought lawyers to invent more lethal poison pills. In addition, the fact that the flip-over poison pill passed the courts scrutiny encouraged lawyers to try their luck with discriminatory pills. The discriminatory pill separates the treatment it gives to the bidder from that of the rest of the shareholders of the target. While the rights of the rest of the shareholders are triggered once, the bidder acquires a substantial portion of the target stock (without awaiting a second-step transaction), the bidders rights are void.

Instead of receiving rights for common shares of the bidder, as in the flip-over case, the rights 'flip in' and grants each holder to purchase the target's stock at a sharp discount. It is therefore important that the rights are discriminatory, or else the bidder's share of the target would not be diluted. It is also common to supplement the flip-in poison pill with a flip-over component, for extra takeover protection. This second-generation pill is undoubtedly a fierce takeover defense. For one, it deters bidding, since success would lead to great dilution of the acquired share. And second, since every shareholder knows that his rights would become valuable if the bid is successful while he, personally, does not tender, no one would want to tender his shares to the bidder in the first place.

Finally, just like the flip-over poison pill, the board of directors of the target may redeem the flip-in poison pill in order to entertain friendly transactions. As we have noted before, this feature of the pill makes it susceptible for circumvention. If the bidder captures the corporate board by running a proxy contest, his newly-elected directors will be able to redeem the poison pill. This possibility brought the corporate targets to try to interfere with the corporate vote mechanism, and also invent new types of pills. The courts, however, were reluctant, in most cases, to sanction the use of such pills. For instance, *a dead hand poison pill* preserves redemption power in the hands of the directors that launched the pill, whether or not they are in office. And, a *no hand poison pill* does not permit redemption at all once the board is replaced. The courts usually rejected both the novel versions of the pill on the grounds that the board of directors are not allowed to restrict its future discretion.[14] The other defensive tactics that impede the proxy mechanism are discussed below.

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[14]Carmody v. Toll Bros., 723 A.2d 1180 (Del.Ch. 1998); Quickturn Systems, Inc. v. Shapiro 721 A.2d 1281 (Del. 1998).

Common Proxy Contest Impediment Charter Provisions

While courts generally did not legitimize the dead hand poison pill, they had to approve charter provisions that interfered with the ease in use of the voting mechanism. The reason is that the legislation in most of the states explicitly allows such provisions, even though they hurt the effectiveness and availability of the proxy process as a means to achieve unsolicited changes in corporate control. By and large, these charter (or bylaws) provisions that cause delay and impede the proxy mechanism of the firm may be divided into provisions that inhibit shareholders' opportunities to express their opinions and provisions that narrow shareholders' means to wrest control from the incumbent board of directors. Since each state has different relevant standards, the analysis below concentrates on the Delaware case as the leading corporate domicile.[15]

Provisions that Limit Shareholders Opportunities to Voice their Opinion

Unlike the board of directors that can easily convene and sustain its will, the large body of shareholders is bound to reach decisions in structured ways. To nominate or replace directors, shareholders can act through the shareholders' regular general meeting, a special shareholders meeting or written consent in lieu of a meeting. Well-designed anti-takeover provisions may impede the effectiveness of each of these tools.

Written Consent in Lieu of a Meeting

The most rapid and the easiest way for shareholders to voice their opinion and replace the board of directors is the written consent process. Consequently, even if the target firm is shielded by a poison pill, it may be captured within a minimal period of 45 days imposed by the federal proxy regulation (assuming that shareholders possess the right to remove directors without cause). The right to vote by written consent, in lieu of a vote in the shareholders' meetings, was legislated in a 1974 amendment to the Delaware Corporate Code.[16] As the market for corporate control

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[15] *See* Roberta Romano. 1985. 'Law as a Product: Some Pieces of the Incorporation Puzzle', *Journal of Law, Economics and Organizations*, 1: 224, 225; Demetrios G. Kaouris. 1995. 'Is Delaware Still a Haven for Incorporation?', 20 DEL. J. CORP. L. 965, 1012.

[16] *See* DEL. CODE ANN., tit 8, § 228 (1991).

was yet to be sparked, no one thought that this right would enhance the proxy mechanism potency as the major tool of the market for corporate control. In fact, the written consent option was presented to the Delaware Code as a mere cost-saving measure to replace expensive shareholders' meetings in cases of fairly-concentrated ownership.[17] However, the following decade, in the heyday of the market for corporate control, the shareholders' written consent procedure had an unexpected role in control contests.[18]

The important role of the written consent mechanism may be impeded by a simple takeover defesce. Since Delaware code permits firms to opt out of the written-consent-right default by a charter amendment, firms can forbid shareholders' use of written consent in lieu of a meeting.[19] Managers of such firms are secured by this charter provision from being easily and rapidly expelled from office through a written consent manoeuvre. Moreover, using this takeover shield provides managers with another advantage, since the board of directors cannot closely regulate the consent process while it may manipulate the agenda of the shareholders' meeting.

Special Shareholders Meetings

A special shareholders meeting is a meeting scheduled in addition to the annual shareholders meeting and can thus facilitate rapid replacement of the management even in the absence of a written consent procedure. The relevant default standard in the Delaware Code does not include a straightforward right for shareholders to summon a special meeting.[20] Interestingly enough, the default states that unless otherwise provided in the charter, the bylaws can grant authority to summon a special shareholders meeting. Since the shareholders govern the bylaws, as a matter of law, they may amend the bylaws to include a right to summon

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[17]See Gordon, Jeffrey N. Gordon. 1989. 'The Mandatory Structure of Corporate Law', *Columbia Law Review*, 89: 1549, 1564.

[18]*See generally* Aguilar. 1984. 'Firms Fear a New Tool in Takeover', *Wall Street Journal*, Aug. 1, at 27, and for an anecdote example *see* A. Sloan. 1983. 'Three Plus One Equals Billion: The Bendiz-Martin Maietta War', 146–47.

[19]*See* DEL. CODE ANN., tit. 8, § 228 (1991).

[20]*See* DEL. CODE ANN., tit. 8, § 211(d) (1991).

a special shareholders' meeting.[21] However, equipped with the proper charter provision, managers may still have the upper hand. Therefore, one can often find charter provisions that preclude or limit the right to call for a special shareholders meeting, so that the shareholders will not be able to circumvent the default by changing the bylaws. Once the charter explicitly impedes shareholders' right to summon a special meeting, the bylaws, and in turn the shareholders, lose control over the issue. Another technique is to install a supermajority bylaw requirement regarding special shareholders meetings within the bylaws so that shareholders would not be able to change it.

This sophisticated type of anti-takeover provision that prevents special meetings postpones the opportunity of shareholders to express their opinion until the next annual meeting. With a right to summon a special meeting, proxy solicitation can be accomplished within 60–90 days, but without it shareholders have to wait for the regular annual meeting of the firm. The board is authorized to schedule annual meetings and the period between two regular meetings could be stretched to as much as 360–540 days, depending on the state of incorporation.[22] This, undoubtedly, is a substantial delay.[23]

General Shareholder Meetings and the Staggered Board Provision

Evidently, unsolicited control transactions are frequently delayed even beyond the annual shareholders meeting. The most potent anti-takeover provision, the charter provision that forms a staggered board, is to be blamed for such delays.[24] According to the Delaware Code, all the

[21]See Martha Brannigan. 2001. 'SubTrust Seeks Wachovia Bylaw Change As Part of Attempt to Achieve Takeover', *Wall Street Journal*, Jun. 5 at A–4.

[22]For the maximum days between annual meetings in the 50 different states *see* John C. Coates. 2001. 'Explaining Variation in Takeover Defenses: Blame the Lawyers', *California Law Review*, 89: 1301 table B-5.

[23]For an in-depth explanation on the period of delay *see* Coates, *supra* note 3, at 853.

[24]See generally Investors Responsibility Research Center, Background Report on Classified Boards (1994); Brent W. Ambrose and William L. Megginson. 1992. 'The Role of Asset Structure, Ownership Structure, and Takeover Defenses in Determining Acquisition Likelihood', 27 *Journal of Financial and Quantitative Analysis*, 575–89.

members of the board must stand for election annually.[25] However, a charter provision may form a staggered ('classified') board, in which only one-third of the board is replaced every year. Thus, to gain control over a company with a staggered board, one must win two consecutive proxy fights, and in some cases even three proxy fights if the company has a cumulative voting procedure.

A staggered board complicates the entire proxy mechanism. It makes control transfers lengthy and expensive. In some industries, waiting two years for a takeover bid to materialize is simply impractical. One can observe the detrimental effect of a staggered board from the anecdote of the infamous Moore–Walace's proxy battle. Moore Corp. had launched a US$ 60 per share tender offer for Wallace Computer Services Inc., which reflected more than a 50 per cent premium on the market price. The bid was contingent upon the board's consent to redeem the firm's poison pill, but although 73.5 per cent of the equity was tendered, the board refused to redeem the pill. Next, Moore won a proxy contest for the board, but since Wallace had a staggered board, Moore was only able to nominate a minority of three members out of an eight-member board.

Consequently, and even though it was overwhelmingly supported by Wallace shareholders, Moore decided to back out of the battle and not to wait another year until the next annual meeting. In hindsight, a year after Moore's proposal, the stock price of Wallace did not reach the price offered by Moore, while the S&P 500 Index gained 20 per cent in the same period.[26] This anecdote is a rare example of a bidder that won both a contingent hostile tender offer and a first annual meeting battle against a staggered board, but still had to decline. More often, the anticipation of the costs of delay created by staggered boards causes bidders not to engage targets with such takeover targets in the first place, unless there are extremely generous returns awaiting the winner.

The ability to delay takeovers for up to two, and in some cases even three years (thanks to the addition of a cumulative voting mechanism),

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[25] *See* Del. Code Ann., tit. 8, 141(d) (1991).

[26] *See* Steven Lipkin. 1995. 'Wallace Faces Test Today in Fighting Off Moore's Bid', *Wall Street Journal*, Aug. 12; James P. Miller. 1995. 'Wallace Computer Holders Elect Directors Backed by Moore Corp', *Wall Street Journal* Nov. 12; Larry M. Greenberg. 1995. 'Moore Corp. Lets Deadline Pass On US$ 1.38 Billion Bid for Wallace', *Wall Street Journal* Dec. 21; Reed Abelson. 1996. 'When Boards say "No Deal" to Holders', *New York Times*, June 10.

evidently became very attractive to some firms. In an upsurge from the early 1980s, today over 60 per cent of all the public companies have boards of directors that are not fully replaced every year.[27] Undoubtedly, this is an extremely lethal and frequently used anti-takeover provision.

Provisions that Limit Shareholders Means to Wrest Control

Assuming that shareholders have an opportunity to express their opinion, it does not automatically follow that they can easily alter the power structure in the boardroom. To complete a takeover, it is necessary for the bidder's proponents to occupy a majority of the board's seats. Such a majority could be achieved by replacing directors who have served their full term, removing and replacing directors while they serve in office or expanding the board and packing it with a majority of new directors. Well-drafted anti-takeover provisions can limit shareholders' rights to dismiss directors or to expand the board, leaving open only the opportunity to replace directors who have served their full term.

Provisions that Eliminate the Right to Dismiss Directors without 'Cause'

Assuming that shareholders can voice their opinion via written consent or a special shareholders meeting, they may dismiss directors and entertain a takeover without awaiting the shareholders general meeting. This possibility should not, however, be taken for granted. Most default state laws indeed allow shareholders to dismiss directors from office without a cause, but firms can elect to opt out of this arrangement.[28] If a well-structured provision is added to the firm's charter, shareholders may not remove directors from office before their term is due.

Provisions that Foreclose Shareholders' Ability to Expand the Board

Even if shareholders may not dismiss directors from office without cause, they may still act prior to the regular shareholders' meeting. When they

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[27]Alesandra Monaco. 1999. Corporate Governance Service 1999 Background Report C: Classified Boards, Investor Responsibility Research Center.

[28] In Delaware, unlike other states, only a charter provision that forms a staggered board may abolish shareholders' right to remove directors. *See* DEL. CODE ANN., tit. 8, § 141.

can act either by written consent or by a special shareholders' meeting, shareholders can expand the board of directors and occupy the new seats up to the point in which the incumbent directors become a minority. Thus, shareholders may shift control over the firm without dismissing any directors from office.

The default law in Delaware requires that the number of directors be set in the charter or the bylaws. When the number is set in the bylaws, shareholders may use their power to amend the bylaws to enlarge the board and wrest control from the incumbent directors. To exemplify, in a recent takeover struggle, the bidder, Suntrust, tried to persuade the shareholders of the target, Wachovia, to amend the bylaws in order to expand the board of directors so that pro-Suntrust directors could influence Wachovia. However, if the number of directors is set in the charter, shareholders cannot intervene and pack the board with new directors since the board has veto power over charter amendments. Such a charter provision is therefore an implicit anti-takeover provision. Other techniques are to include a supermajority bylaws requirement or an explicit prohibition in the charter on shareholders' rights to fill vacancies.

Post-Bid Measures

Greenmail

Even after a bid is launched or after a hostile acquirer has accumulated a substantial block of the target stock, some defensive manoeuvres are still available. One of those manoeuvres, and perhaps the most notorious anti-takeover defense, is the 'greenmail'. Greenmail is the term used for the repurchase by the target company of the shares held by a hostile acquirer. The hostile raider withdraws from the battle, but enjoys the profits of the repurchase, which is negotiated with the target's management. While managements opt for greenmail after a bid is launched or when the bid is pending, the possibility of extracting a greenmail may attract a bid in the first place. Therefore, some firms adopt charter provisions that foreclose the ability of the firm to pay greenmail.[29]

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[29]Ronald Gilson. 1988. 'Drafting and Effective Greenmail Prohibition', *Columbia Law Review*, 88: 329.

While the practice of paying greenmail started in the 1960s and was sanctioned by the courts in the famous *Mathes* case, the humongous payments of the 1980s led to much criticism. This criticism eventually reduced greenmail events as it brought some state legislators, including New York, to ban the greenmail. The federal internal revenue code was also revised and a 50 per cent non-deductible excise tax on greenmail profits was included.[30]

Litigation

Another highly-popular defensive post-bid tactic is defensive litigation. Defensive litigation is conducted even if the target has low chances of success. Management simply has nothing to lose, and for a target that was struck by a surprise bid, litigation is the first chance to fight back. In the litigation, the target is usually asking for an injunction to block the bid, but even a preliminary court order that prolongs the bid period may help the target reorganize and search for an alternative to the hostile bid.

Often times the grounds for litigation are shaky and the legal counsels of the target just try their luck with any possible claim. Anti-trust claims are always raised, but are eventually rarely accepted. Other possible claims are based on securities disclosure, in which the target's counsel argues that the bidders omit material facts about the bid or make some misrepresentations. These claims, however, usually do not buy the target much time since courts allow bidders to amend the bid documents, if necessary.

The Legal Standards for Courts' Scrutiny of Defenses

Before the takeover wave of the 1980s and management defensive response, American courts usually applied two standards of scrutiny to corporate acts. Most corporate decisions enjoy the broad protection of the *business judgment rule.* Once the board of directors shows that it reached an informed decision, and has no conflicting self-interest in the decision, the courts do not give second thought to the directors' conclusions. However, when the corporate act may be biased due to self interest, such as the case of self-dealing with a controlling shareholder or director, the court

[30]Internal Revenue Code Sec. 5881.

applies the *entire fairness* standard. Once the entire fairness standard is applied, the court considers all aspects of the decision to make sure that it has sound business justifications.

Corporate acts involving takeover defenses do not fit comfortably with any of these standards. On the one hand, the board of directors may be biased since it is most likely to be ousted if the takeover bid succeeds. But, on the other hand, and unlike the regular self-dealing setting, a takeover event is a major transaction for the target's shareholders for which management judgement can be beneficial. Therefore, the Delaware Supreme Court in the seminal case of *Unocal* developed a novel standard, the *proportionality test*, to examine anti-takeover steps. The first prong of the proportionality test requires that the board of directors demonstrate 'reasonable ground that a danger to corporate policy or effectiveness' exist by reason of the hostile takeover threat. And the second prong asks whether the defensive step is 'reasonable in relation to the threat posed'.

The first prong was never a real barrier for the adoption of takeover defenses. It was interpreted by the courts to require that the board of directors point to a corporate purpose in their acts, rather than a threat to the personal interests of the directors.[31] And since every takeover interferes with corporate policy, the first requirement of the proportionality test is easily fulfilled.

As for the second requirement of the proportionality test, things are more complicated. Initially, commentators debated whether boards' decisions to reject transactions, made under the shields of the poison pills or some other defensive manoeuvre, were about to be scrutinized in depth by the courts. On the one hand, Gilson and Kraakman, encouraged by early court decisions, advocated substantive scrutiny by the courts of any board decision regarding unsolicited offers to purchase the firm. Specifically they highlighted an intermediate review standard that is not too harsh; but, nevertheless, does not leave unconditional discretion to the board of directors.[32] A few years later, Kahan explained that the Delaware court never intended and would never conduct such substantive scrutiny.

[31] AC Acquisitions v. Anderson, Clayton & Co. Court of Chancery of Delaware, 1986 519 A.2d 103.

[32] *See* Ronald Gilson & Reinier Kraakman. 1989. 'Delaware Intermediate Standard for Defense Tactics: Is there Substance to Proportionality View?', *Business Law*, 44: 247, 256–60.

The requirements that the board of directors is obliged to fulfil in a case of an offer to purchase the firm are mostly procedural and technical.[33]

Eventually, the Delaware Supreme Court made it quite clear that only when the managerial defensive manoeuvre is coercive or preclusive, will it invoke the second prong of the *Unocal* proportionality test.[34] One exception to this lax approach to managerial defensive conduct exists when the board initiates a sale of the company to a third party. Under these circumstances, the court limits the board's ability to defend its sale plan against a hostile bid by another potential buyer.[35] It is also important to mention that the proportionality test is applicable only to unilateral defensive acts taken by the board of directors. Once the shareholders body approves a defensive measure, such as an approval of an anti-takeover charter amendment, the courts do not examine the defense with the enhanced proportionality test, and the takeover protection practically receives immunity.[36]

Finally, the courts relatively lax response to most anti-takeover manoeuvres evaporates once managers try to manipulate the corporate vote mechanism in a preclusive manner. Since the corporate vote mechanism is the only alternative for a hostile takeover in the era of the poison pill, such responses from the courts are vital. Therefore, under the *Blasius* doctrine, any management proposed transaction or unilateral takeover defense that has the primary purpose of interfering with the corporate elections would not be sanctioned unless the board shows compelling justifications.[37] This standard of review is so demanding from the management that the court is very cautious in invoking it, but once it applies, it is almost impossible to overcome it.[38]

[33] *See* Marcel Kahan. 1994. 'Paramount or Paradox: The Delaware Supreme Courts Takeover Jurisprudence', *Journal of Corporate Law*, 19: 583.

[34] Unitrim, Inc. v. American General Corp. Delaware Supreme Court, 1995 651 A.2d 1361.

[35] *See* Revlon Inc. v. MacAndrews and Forbes Holdings, Inc., 506 A.2d 173, 181 (Del. 1986); Paramount Communications, Inc. v. QVC Network, Inc. Supreme Court of Delaware, 1994 637 A.2d 34.

[36] Williams v. Grier Supreme Court of Delaware, 1994 671 A.2d 1368.

[37] Blasius Industries, Inc. v. Atlas Corp. Court of Chancery of Delaware, 1988 564 A.2d 651.

[38] Chesapeake Corporation v. Shore Court of Chancery of Delaware, 2000 Del. Ch. Lexis 20.

Trends in Defenses Adoption and
Future Avenues of Research

During the second half of the 1980s, many firms adopted anti-takeover charter provisions of the various types discussed earlier, but the phenomenon was not as widespread as the adoption of the poison pill. One should also remember that unlike the poison pill, which was literally unheard of until the mid-1980s, some anti-takeover charter provisions were present before the wave of control contests. The invention of the poison pill magnified the vast impediment potential ingrained in these charter provisions. Out of a sample of approximately 400 large firms (primarily S&P 500), restrictions on the ability to act by written consent or to call a special shareholders meeting were present in 66 firms in 1984 and in 178 firms in 1989.[39] In the same sample, 143 firms had a classified board in 1984 and 253 had one in 1989. While this ratio remained more or less constant throughout the 1990s, it represents a striking uproar from the approximately 20 per cent of the beginning of the 1980s.

To support the common agency theory understanding that these charter amendments are sub-optimal, Jarrell & Poulsen and Baghat & Jefferis illustrated that adoption of anti-takeover charter provisions was related to a small but statistically significant decline in the stock price.[40] Moreover, there is a direct evidence that such charter provision actually deter takeovers. Pound found that a combination of staggered boards and supermajority requirements for a merger in the firms' charter significantly decreased the incidences of hostile bids.[41] As mentioned earlier, all these harsh findings did not lead shareholders in the 1980s

[39]J. M. Karpoff & M. G. Danielson. 1998. 'On the Uses of Corporate Governance Provisions', *Journal of Corporate Finance*, 4: 347, 354, table 2.

[40]*See Gregg Jarrell* et al. 1984. Office of the Chief Economist (SEC), *Shark Repellants: The Role and Impact of Anti-takeover Charter Amendments*, and Bhaghat and Jefferis. 1991.*Voter Power in the Proxy Process: The Case of Antitakeover Charter Amendments, Journal of Finance Economics*, 30: 193, 200.

[41]*See* John Pound. 1987. *The Effects of Antitakeover Amendments on Takeover Activity: Some Direct Evidence, Journal of Law and Economics*, 30: 353–67. For a summary of the empirical evidence of the harmful effects of antitakeover provisions *see* Roberta Romano. 1993. *The Genius of American Corporate Law.* New York: AEI. pp. 60–75.

to withhold their approval and prevent managers from adopting anti-takeover provisions.[42]

By the 1990s, however, the ease of adopting ATPs had all but dissipated. The increased power and the activity of institutional shareholders practically precluded managers from implementing ATPs in seasoned firms. Surprisingly, while institutional investors frequently block management proposals to adopt ATPs, they do not force firms that already have them to remove them, nor do they pressure IPO stage firms to defer implementation of anti-takeover defenses. Consequently, ATPs may be either adopted at the IPO stage or effectively abandoned forever. As phrased by one commentator: 'After an IPO is complete and ownership dispersed, the takeover defenses of a public company in the US in the 1990s have generally been fixed'.[43]

The recognition that after the IPO stage anti-takeover defenses remain fixed led scholars to investigate the adoption trends of IPO stage firms. Prior to the IPO there is no divergence in incentives between shareholders and managers, and thus firms at such stage are assumed to reach an optimal governance structures. And, since such governance structure remains fixed in relation to takeover defenses, the outcomes of the study of IPO stage firms was expected to finally reveal if anti-takeover defenses are inimical or beneficial.

However, the results of the recent empirical studies regarding anti-takeover charter provisions in the IPO stage firms have puzzled the corporate law scholars and did not satisfy any side of the debate.[44] While some companies adopt harsh and effective defenses, others have no such

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[42]*See* Morris Danielson and Jonathan Karpoff. 1998. 'On the Uses of Corporate Governance Provisions', *Journal of Corporate Finance*, 4: 347–71; Wayne Mikkelson and M. Megan Partch. 1989. 'Managers Voting Rights and Corporate Control', *Journal of Financial Economics*, 25: 263, 267.

[43]Coates, *Supra* note 22.

[44]*See* Coates, *supra* note 22; Robert Daines & Michael Klausner. 2001. 'Do IPO Charters Maximize Firm Value?', *Journal of Law*, *Economics and Organization*, 17: 83–120; Laura C. Field and Jonathan M. Karpoff. (forthcoming) 'Takeover Defenses at IPO Firms', *Journal of Finance*, earlier draft available at http://papers. ssrn.com/sol3/papers.cfm?abstract_id=236043.

provisions whatsoever.[45] To understand the reason for this divergence in firm behaviour, researchers investigated relevant dissimilarities between adopting and the non-adopting firms. Surprisingly, the firms that had opted for defenses did not possess the special features identified by the classic literature as making defenses of particular value to a firm.

Consequently, researchers proposed a number of theories of market failure that provide alternative explanations to the classic literature for the adoption of anti-takeover shields. The feature common to all these theories is that they all reject the classic notion that the corporate governance structure of IPO firms maximizes the benefit of the entire shareholder body.[46] One study suggests that the market does not price the costs of an anti-takeover provision and, therefore, IPO stage firms can often get away with adopting detrimental defenses that protect managers from takeovers, at the expense of the public shareholders. A second study suggests that lawyers do not always give good advice to their clients with regard to ATPs and therefore firms fail to select the optimal tactic. Finally, a third study suggests that some pre-IPO firms have dominant managers who select takeover defenses at the expense of the non-managerial pre-IPO shareholders. The difference between this theory and the first one presented earlier is that this theory posits that the public markets price takeover defenses well and know that they are harmful for shareholders, while the former theory did not accept this classic proposition. Therefore, the public shareholders presumably pay less for firms with takeover defenses, making the non-managerial pre-IPO shareholders bear all the costs of adopting the defenses, while only the managerial pre-IPO team enjoys their benefits.

In reply to this line of arguments, I have argued elsewhere that all these explanations are excessive and that the seminal notion that IPO stage

[45]One commentator recently presented the challenge to traditional corporate law as follows: 'Standing alone, Lipton's position would suggest all companies should adopt defenses prior to an IPO, and Easterbrook & Fischel's position would suggest that no firm should adopt a defense; yet, in reality, about half do and half do not.' Coates, *supra* note 22.

[46]This classic notion is attributed to the seminal work of Jensen and Meckling. Michael C. Jensen & William H. Meckling. 1976. 'The Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structures', *Journal of Financial Economics*, 4: 305–60.

firms select optimal governance terms may still stand. The reason that the classic literature failed to provide a full rationale for the firms behaviour is that it concentrated on what I call supply-side explanations. I view the decision to go public without defenses as a decision to produce an unshielded target and show that the classic literature focussed on the costs of producing such a target. The literature explained that some firms have features that make defenses particularly valuable to them, and therefore their costs of producing an unshielded target are high. Those firms, the argument goes, are the ones most likely to adopt defenses. However, I argue that the empirical studies failed to uncover such behaviour because the classic literature never considered demand-side considerations.

The implied assumption of the classic literature is that the benefits of rejecting defenses do not fluctuate with the number of firms on the market that adopt defenses. I argue that greater the number of firms that adopt defenses, the higher the benefits that accrue to the firms that reject them. The reason is that not only do takeover defenses prevent takeovers, they also divert takeover activity to unshielded targets. This argument may be formulated as a demand-side explanation. The more firms there are producing unshielded (and therefore the fewer the firms adopting defenses), the lower the price that the market is willing to pay for the unshielded product. Conversely, the fewer the number of firms producing unshielded targets, the higher the price the market will place on each unshielded target.

The reason that the adoption of defenses by a firm benefits its unshielded peers is that purchasers make comparative analyses in their decision-making processes.[47] This fact was readily shown by an empirical study that found that the termination of a planned merger creates vast stock gains for industry rivals, suggesting that industry rivals are takeover-alternatives and may be purchased once the merger fails. In addition to looking at the functional characteristics of the different potential targets, bidders must also compare the degree of ease with which each target may be acquired. Therefore, in order to draw a complete picture of a company's takeover prospects, one must consider not only the company's defenses, but also those of its peers. In a sense, this externality argument

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[47] *See* Aigbe Akhigbe et al. 2000. 'The Source of Gains to Targets and Their Industry Rivals: Evidence Based on Terminated Merger Proposals', *Financial Management*, 29: 101.

is close to Shavell's diversion-of-crime argument. For example, placing bars on one's windows would result in a higher risk of burglary to one's neighbours.[48]

Put differently, the takeover risk to an individual firm is not endogenous to its anti-takeover decisions. Each prospective bidder naturally confronts a limited pool of suitable targets from which to choose. Thus, every potential target must consider the defenses available to other prospective targets. The defensive decisions of one firm may divert takeover activity to another firm, which may, in turn, affect the average takeover premium that the latter may reasonably expect in a takeover event.

Taken together, the demand-side explanation that has been suggested here and the supply-side explanations previously raised in the literature may help to solve the conundrum of the diversity of firm-behaviour at the IPO stage. Some firms may have features that cause them to derive greater benefit from adopting takeover defenses than do other firms. However, greater the number of firms that adopt defenses, higher is the expected premium that their unshielded peers can hope for. The market stabilizes at the point where the marginal firm is indifferent to the adoption of ATPs, since both tactics provide similar benefits.

The fact that the empirical studies could not find evidence that the adopting firms are those possessing the special features that make takeover defenses especially of value should not be taken as a discouraging sign. The supply effects may be mild or theoretically non-existent, but nevertheless, only part of the firms would elect to remain unshielded. Put differently, even if all firms are similar in all relevant features, they may diverge in their anti-takeover decisions. The reason for this is that even if takeover defenses were to provide similar benefits to all firms, an adoption trend would raise the benefits accruing to unshielded firms. Eventually, at some ratio of defenses-adoption, the benefits of the two strategies would become equal for all firms and the market would maintain this ratio. To sum up, the divergent behaviour of IPO stage firms regarding takeover shields does not necessarily point to any market failure.

Another promising avenue of research lies in the view that anti-takeover defenses are actually network products. In opposition to the dominant

[48]Steven Shavell. 1991. 'Individual Precautions to Prevent Theft: Private Versus Socially Optimal Behavior', *International Journal of Law and Economics*, 11: 123, 126 (1991).

view in regards to the IPO stage, commentators have recently employed arguments from the network product theory in the corporate law products' arena.[49] Network products, like VCRs and computers, bear obvious extensive externalities on other users of similar products.[50] Although the empirical work of emphasizing the fact that this phenomenon can also be substantial in corporate law products (for example, indentures or charters) is still in its incipiency, the argument has the necessary qualities to become a powerful argument for inefficiencies at the IPO stage.[51] If the analogy to network product markets is appropriate, it will not be surprising to find stagnation over the usage of inefficient standards (or inability to reach efficient standards).

As we have discussed earlier, empirical evidence of corporate charters reveals that while corporations usually adhere to the default arrangement offered by state corporate law, the opposite is true in regards to charter provisions that may impede hostile takeover attempts.[52] For seasoned firms, which were the first to adopt anti-takeover mechanisms, the adoption may be explained by managerial distorted incentives. However, if takeover defenses are network products, many IPO stage firms may have opted for defenses in order to adhere to the standard that was adopted by the seasoned firms. For instance, when most of the market is shielded, the managers of an unshielded target may be taken over even if they perfectly perform. This may happen because such unshielded targets are simply easy to purchase. Hence, while some firms prefer not to be shielded, other things equal, they may opt for defenses when most of the market is shielded. If this is true, then the agency problem that led seasoned firms to adopt defenses has became contagious to some of the IPO stage firms.

[49] *See* Michael Klausner. 1995. 'Corporations, Corporate Law, and Networks of Contracts', *Virginia Law Review*, 81: 757.

[50] See, for example, Michael L. Katz and Carl Shapiro. 1985. 'Network Externalities, Competition and Compatibility', *American Economic Review*, 75: 424.

[51] *See* Kahan and Klausner. 1997. 'Standardization and Innovation in Corporate Contracting (or "the Economics of Boilerplate")' *Virginia Law Review*, 83: 713.

[52] *See* Karpoff and Danielson, *supra* note 39, at 354, table 2 for the data regarding seasoned firms.

Concluding Comments

Takeover defenses can be classified into various categories like corporate charter defenses, poison pill defenses, statutory defenses, asset and capital structure defenses. Corporate charter defenses are provisions of corporation charters that impede takeovers. The super majority clause, for example, requires that a specified number of votes be cast in favour of a decision for it to be implemented. The company's management can control any decision by holding a certain number of shares that limits others from obtaining super majority. For instance, if the law requires that 60 per cent of votes be cast in favour of a proposal, then the company's management can block a transaction by holding more than 40 per cent of votes. Companies may block a takeover by making changes in the company's assets and liabilities. Leveraged recapitalizations, for example, make the target company unattractive due to its heavy debt load and the higher probability of going bankrupt. Finally, anti-takeover legislations may prohibit companies from acquiring. Academic studies of takeover defenses suggest that most takeover defenses serve the company's management at the expense of shareholders. Many countries are removing anti-takeover legislation, a welcome move.

11
Spin-Offs, Equity Carve-Outs and Targeted Stocks

VISHWANATH S.R. AND CHANDRASHEKAR KRISHNAMURTI

CHAPTER OBJECTIVES

- Highlights the forces driving corporate restructuring initiatives around the world
- Explains the different types of restructuring
- Provides a summary of empirical findings on the different types of restructuring
- Introduces targeted stocks, an innovative type of restructuring
- Describes a landmark restructuring in an emerging market

In recent years, we have witnessed a large number of divestitures, spin-offs, split-ups and such other corporate restructuring activities which change the asset and liability composition of firms. A few decades ago, the 'diversified conglomerate' was the in-thing. It is no longer fashionable to be in unrelated businesses. The companies that once manufactured everything from hairpins to aircrafts have divested many businesses in which they do not have a competitive advantage. General Mills, for example, in its mission to become a 'All-Weather-Growth Company', diversified into household appliances, military electronics, chemicals and consumer foods in a span of three decades, and ended up with an

inefficient organizational structure, inappropriate capital allocation system and dissension among operating managers.[1]

Diversification as a strategy is based on the premise that a downturn in one company's fortunes will be offset by an upturn in another company's earnings. Modern finance theory hypothesizes that unsystematic risk is not priced in markets and is hence irrelevant. So, a diversifying company can create value only by providing a better risk-return trade-off which is unavailable through simple portfolio diversification. There are six ways in which diversification can create value:[2]

- By applying one company's knowledge of the industry and skills to the competitive problems and opportunities of the other.
- By investing in related businesses to reduce long-run average cost.
- By achieving a critical mass in an area of competence.
- Reducing systematic risk by diversifying into related product markets.
- By profitable allocation of cash among units to maximize efficiency.
- By lowering cost of debt and weighted average cost of capital due to risk pooling.

The debt capacity of the combined entity may increase due to 'co-insurance'.

One of the disadvantages of a diversified firm is that the more profitable units subsidize the less profitable ones, leading to heart burns and managerial defection.

The general conclusion of some financial economists is that unrelated diversification does not increase returns although related diversification may help to some extent. A recent study suggests that the average value loss due to diversification is about 13–15 per cent, largely a product of

[1]Donaldson G. 1990. 'Voluntary Restructuring: The Case of General Mills', *Journal of Financial Economics*, 27.

——. 1991. 'The Voluntary Restructuring of General Mills', *Journal of Applied Corporate Finance*, Fall.

[2]Salter, Malcolm. and W. Weinhold. 1978. 'Creating Value via Diversification', *Harvard Business Review*, July.

——. 1979. *Diversification Through Acquisition,* The Free Press.

over-investment and cross-subsidization.[3] Why do so many diversifications go bad? What is the secret of successful diversification (for example, 3M)? Companies would do well to ask themselves some commonsensical questions (such as the following) before they diversify:

- What can our company do better than our competitors?
- Can we catch up with or leap-frog over competitors?
- What can our company learn by diversifying, and are we sufficiently organized to learn it?

Forces Driving Restructuring Initiatives

When a firm's condition deteriorates to the extent where it cannot meet its financial obligations, the firm is said to be in financial distress. Usually, the first signals of distress are violation of debt covenants, suspension of dividends, and such others. Bankruptcy includes financial reorganization and liquidation. Financial reorganization involves rearranging a firm's cash flow (for example, converting debt into equity), whereas liquidation ends the firm's operations. It involves selling off tangible assets and paying off claimants to the extent possible. Recent examples of distressed firms are L A Gear, Enron, Iridium, Chrysler, Massey Ferguson and Marvel Entertainment. Some of these companies, once considered the darling of the investment community, have left million of investors with worthless paper. Why do some apparently well-run companies get into financial distress? The causes and consequences of distress can be inferred from the *ex-ante* characteristics of the companies that became distressed and from the *ex-post* consequences on the companies' stakeholders. Some generic reasons for restructuring are given in the following context.

Shareholder Activism

The Anglo-Saxon model recognizes shareholder wealth maximization as the primary objective of a corporation. Companies making value-destroying investments are often disciplined by active shareholders. This trend is spreading to other parts of the world as well. In the Netherlands, for instance, a group of leading pension funds has begun to increase their

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[3]Berger, P. and E. Ofek. 1995. 'Diversification's Effect on Firm Value', *Journal of Financial Economics*, 37.

influence in company boardrooms, pressing companies to change strategy and create value.

Till recently, the primary focus of Japanese companies was on growth in sales, assets and market share, with no attention given to cost of capital. Competitive challenges are forcing them to acknowledge the fact that capital is not a free resource. The seniority system which existed in most Japanese companies for many years is now being replaced by pay-for-performance incentive plans. In India, Unit Trust of India, a large government-owned mutual fund, is communicating to all its nominees on company boards about what they should seek from companies in which they are directors. UTI's list on corporate governance initiatives being sought includes setting up board level committees, having a majority of non-executive directors on the board, appointment of quality outside directors, proper disclosure norms and succession planning at the top, including quality selection process for Chief Executives.[4]

Failure of Internal Control Systems

Changes in ownership through mergers and acquisitions generally lead to an increase in shareholder value. Many academic studies in America report increases in shareholder returns of target companies. Mergers and acquisitions enable transfer of assets to owners who value them most. In well-planned acquisitions, the gain is primarily due to better governance and improved efficiency. In a market-oriented economy like the US, companies making value-destroying investments are disciplined by capital markets. The takeover wave of the 1980s in the US was largely due to de-conglomeration that is, companies sold off unrelated businesses and acquired related businesses. In many countries, the market for corporate control is either weak or non-existent. In some Asian and European countries, the market is restricted because of complex cross-holdings, pyramid structures and anti-takeover laws. In the absence of an effective market for corporate control, companies are not subject to the discipline of the stock market. Even when the market for corporate control is active, companies may still escape any disciplinary mechanism.

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[4] Business Standard, 20 March 1999.

By nature, organizations resist control systems and ineffective governance is a major part of the problem with many distressed firms. General Motors, for example, one of the world's high-cost producers in a market with substantial excess capacity, avoided making major changes in its strategy for over a decade.[5] Yet, the board acted to remove the CEO, Robert Stempel, only in 1992, after the company had reported losses of US\$ 6.5 billion in 1990 and 1991 and an opportunity loss of over US\$ 100 billion in its R&D and capital expenditure programme from 1980 to 1990. GM is not the only example. IBM, Eastman Kodak, Iridium have all changed strategy or CEO or filed for bankruptcy (as the case may be) only after experiencing severe losses.

Capital Structure

According to modern finance theory, companies with lots of investment opportunities can be expected to issue short-term debt to preserve financial flexibility and to protect lenders against greater uncertainty in the company's future.[6] Further, growth firms ought to use relatively less debt to prevent the under-investment problem. Conversely, for mature companies whose values come mostly from assets-in-place, the costs of bankruptcy are likely to be low. Such firms can afford to have high leverage ratios to prevent wastage of free cash flow by managers.

Conventional wisdom suggests that companies should avoid combining high operating leverage (which leads to high business risk) and high financial leverage (which leads to high financial risk). Earnings are boosted in good times because of the presence of fixed costs and debt; but (earnings) get depressed in bad times for the same reason, that is, the presence of interest payments on debt and other fixed costs. Massey Ferguson, a multinational producer of farm machinery, industrial machinery and diesel engines, sought to increase its market share by turning to the Third World for growth. Massey manufactured its products in the UK and Canada, and sold the output to LDCs (less developed

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[5]Jensen, M.C. 1993. 'The Modern Industrial Revolution, Exit and the Failure of Internal Control Systems', *Journal of Finance*, July.
[6]The cost of long-term debt will be unacceptably high for growth firms because of uncertainty in their future.

countries) in the late 1970s. This strategy worked quite well in the initial years. Compared with competitors, Massey had an aggressive debt policy *and* an aggressive product market strategy. It was unwise to couple a risky strategy in a cyclical industry with high (short-term) debt.[7] When short-term interest rates shot up and the demand (and hence revenue) dried up for its products for various reasons, Massey was thrown into distress. John Deere, its major competitor, however, had moderate debt ratio because of which it had the financial flexibility to make capital investments. When Massey and another competitor, International Harvester, were busy resolving distress, Deere pursued aggressive tactics to lock up market share.

In the 1980s, a large number of American firms undertook leveraged recapitalizations and leveraged buyouts to improve shareholder value and operating efficiency. Many firms that undertook management buyouts in the late 1980s encountered distress due to poor structure of the deals (in terms of price) and adverse regulatory and economic developments. Academic Studies in the US find that the firms encountering distress were more highly leveraged than other firms and exhibit poor post-recap operating performance due to industry-wide problems.[8]

Managerial Myopia

Modern finance theory hypothesizes that the objective of a corporation is to maximize shareholder value. Due to agency conflicts, managers may enrich themselves at the expense of shareholders. One way to control such conflicts is to award stock-based compensation plans, because the equity ownership induces managers to think and act like shareholders. This is based on the premise that other costs like behavioural costs can also be addressed through incentive compatibility. When managers are overconfident of their strategy or when they have biased estimates of payoffs from a project or when they have a distorted view of what is in

[7]Customers in less developed countries are more risky, compared to customers in developed countries.

[8]Denis, David. J. and Diane.K. Denis. 1995. 'Causes of Financial Distress Following Leveraged Recapitalizations', *Journal of Financial Economics*, 37.

their own interest, incentives alone will not help.[9] For instance, Sony Corporation spent substantial time and money on the development of colour television receiver in the 1960s at the behest of Ibuka, one of Sony's founders.[10] Although the company had not achieved a commercially viable manufacturing process, Ibuka insisted on selling the product at a negative profit margin. It was only when the managers announced that Sony was close to ruin that Ibuka abandoned the project. In this case, for example, there was no agency conflict in the sense that Ibuka was a major shareholder himself. Yet, he would not abandon a loss-making project until it almost ruined the company because of loss aversion. In other words, overconfidence and loss aversion can lead to distress even in the presence of high-powered incentives.

Currency and Interest Rate Shocks

Many steel companies in Asia are highly leveraged and depend on high tonnages to survive. When the Asian economies shrank, these companies were badly affected. This trend is not specific to the steel sector. A survey of the five countries most affected by the East Asian financial crisis—Indonesia, the Republic of Korea, Malaysia, the Philippines and Thailand—found that 63 per cent of firms are illiquid (with earnings less than debt service) and 31 per cent technically insolvent (with financial obligations exceeding their equity).[11] For the entire period 1988–96, the average debt ratios in Korea and Thailand were much higher than that in Germany and the United States. East Asian firms had not only too much debt but also the wrong type of debt, that is, short-term. The average share of short-term debt in total debt was about 66 per cent in Malaysia and Thailand, in contrast with 25 per cent in the US and 45 per cent n Germany. Although the share of short-term debt increases gradually, this was one of the causes of distress. In addition, Korean and Malaysian firms had a substantial share of foreign currency short-term debt. When

[9]Hersh, S. 2001. 'Behavioral Corporate Finance', *Journal of Applied Corporate Finance*, Fall, 14(3).

——. 1999. *Beyond Fear and Greed: Understanding Behavioral Finance and the Psychology of Investing*, Harvard Business School Press.

[10]Akio Morita, the other founder, was apparently, not in favour of the project.

[11]Classens, S., S. Djankov and G. Ferri. 1999. 'Corporate Distress in East Asia: The Effect of Currency and Interest Rate Shocks', *Private Sector*, January.

the domestic currency is devalued, the value of foreign currency debt (denominated in, say, US dollars) increases. Sovereign governments may increase interest rates to stabilize their currencies. But this has a negative impact on corporate profitability. This is another reason for the poor performance by East Asian firms.

UnderValuation and UnderPerformance

For many companies, restructuring is a response to deterioration in financial and competitive position. The need for restructuring often arises when the company's market value falls below its intrinsic value due to mistakes in the company's strategy or the inability of the capital market to correctly value the company's stock. The 'value gap'(the difference between current stock price and the potential price that would result from various improvements) can be sometimes as high as 60 per cent.[12] Companies can reduce the value gap by improving operations, using leverage and selling divisional units to the best owner, thereby unlocking value.

Over the last 10 years, the global steel industry, for instance, has earned about 4 per cent return on assets due to intense competition from new entrants with superior plants and lowering of entry barriers due to technological changes. The operating rates have been 70–80 per cent of capacity, which exerts pressure on returns. Managers respond to such situations by merging with competitors to create scale economies, slashing overheads, retrenching employees, promoting early retirement, negotiating salary reductions and reducing purchasing costs. At some point, most companies will have to consider lay-offs, if the law permits.[13] Between 1987 and 1991, over 85 per cent of Fortune 1,000 firms downsized their white-collar workforce; over five million jobs were

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[12] William Fruhan. 1988. 'Corporate Raiders: Head 'em Off at Value Gap', *Harvard Business Review*, July–August.
[13] Layoffs are not permitted in Japan, for example.

affected. Approximately 25 million people—one out of every five US workers—were unemployed for some portion of 1991. Nearly one million managers in the US, with salaries of US$ 40,000 or more, were laid off in 1991.[14]

Retrenchments are often challenged in courts and on the streets. Hyundai's plan to lay off 1,600 workers, FAG's plan to shed 15,000 employees and Scott Paper's decision to lay off 23,000 employees, all set off riots. But does downsizing itself pay? In its 1994 study, the American Management Association found that while corporate downsizing was common, less than 35 per cent of downsized firms reported significant improvements in productivity and only 44 per cent reported significant improvements in operating profits.[15] In contrast, the same study found that nearly one-third of downsized firms actually experienced productivity decreases during the same period. Additionally, firms that had downsized two or more times between 1989 and 1994 reported average gains of about 58 per cent in operating profits and 44 per cent in productivity.

Two academic studies examined the impact of lay-off announcements on shareholder value. A study by Worrell, Davidson and Sharma found a small negative reaction—down by 1 per cent during a 10-day interval and 3 per cent over 90 days—in response to 194 lay-off announcements during 1979–87.[16] Another study by The Institute for Policy Studies found that the stock prices of 17 of the 22 sample firms rose or stayed the same on the day of the announcement of the layoffs.[17] A company can scrutinize its cost structure and benchmark competitors. Some generic strategies

[14]Heckscher, C. and L.M. Applegate. 1994. 'Introduction'. In Heckscher, C. and A. Donnellon. (eds), *The Post-Bureaucratic Organization: New Perspectives on Organizational Change*, Sage Publications.

[15]Lewin, J. and W. Johnston. 2000. 'The Impact of Downsizing and Restructuring on Organisational Competitiveness', *Competitiveness Review*, 10(1).

[16]Worrell, D.L., W.N. Davidson III and V.M. Sharma. 1991. 'Layoff Announcements and Stockholder Wealth', *Academy of Management Journal*, 34, as quoted in Bowman, Edward, H., H. Singh, M. Useem and R. Bhadury. 1999. 'When Does Restructuring Improve Economic Performance?', *California Management Review*, Winter, 41(2).

[17]Anderson, S. and J. Cavanagh. 'CEOs Win, Workers Lose: How Wall Street Rewards Job Destroyers'. *The Institute for Policy Studies*, undated. See www.corpowatch.org.

for reducing the cost of goods sold are:
- Improving relationship with suppliers.
- Reducing product complexity and range.
- Making purchasing a strategic issue.
- Improving manufacturing efficiency.

Restructuring in Emerging Markets

Emerging markets like India and Korea are dominated by business conglomerates, some of whom control as many as 90 (group) companies. The big businesses in Korea, the *chaebol*, typically own 30–50 companies in all key business areas, and the big five–Daewoo, Samsung, Hyundai, LG and SK account for 20 per cent of all borrowing and contribute to almost 50 per cent of GDP. Debt ratios at the top 30 chaebol commonly range between 500 and 800. Would the mantra of scaling down of operations developed in the west be equally applicable to these companies?[18] In these countries, it appears, there are certain important benefits from being a part of a business house not available to other stand-alone companies.[19] Emerging markets are characterized by illiquid capital markets, scarce managerial talent and poor judicial system. These business groups often perform several useful institutional roles not available in the country. For instance, they act as venture capitalists to start up ventures within the group; solve information problems to customers by attaching their group brand name to products manufactured by the group companies (that is, assure a certain level of quality); act as business school by providing high-quality management education to managers, and so on. In other words, business groups that act as proxy market institutions create greater value for shareholders than do more focussed, unaffiliated companies. Given this benefit, it appears, it is probably not prudent to dismantle them. Despite this benefit, several business groups create little

[18]The chaebol in Korea have since been forced to scale down operations, improve performance and create sustainable businesses.

[19]Khanna, T. and K. Palepu. 1997. 'Why Focused Strategies May Be Wrong for Emerging Markets', *Harvard Business Review*, July–August.

—. 1999. 'The Right Way to Restructure in Emerging Markets', *Harvard Business Review*, July–August.

or no value. The total shareholder returns (dividends + capital gains) of some big business groups in India is shown in Exhibit 11.1. The total shareholder returns are based on average of the compounded annual rate of return of major companies in the group. The returns are adjusted for index (Bombay Stock Exchange 30-Stock index) returns. As can be seen, many of them have not performed due to family squabbles, business recession and reliance on government-controlled businesses where profitability is low, and such other factors. Contrast this with the total shareholder returns of stocks of some multinational companies shown in

EXHIBIT 11.1 Total shareholder return of some big business groups				
	TSR (%)			
Business group	*1994–98*	*1995–98*	*1996–98*	*1997–98*
Tata	(2.6)	0.4	0.8	21.8
TVS	(1.9)	(7.7)	(18.1)	(10.6)
Reliance	(8.1)	(10.5)	9.0	(7.4)
Aditya Birla	(18.5)	(21.8)	(18.4)	(13.1)
R P Goenka	(21.7)	(28.2)	(30)	(5.5)
Modi	(23.4)	(24)	(11.4)	(9.8)
Essar	(31.7)	(30.1)	(13.5)	(3.4)
B.K Birla	(30.7)	(31.7)	(33)	(23.2)
L.M.Thapar	(24.4)	(33.3)	(30.9)	16.80
C.K.Birla	(21.7)	(34.90)	(37.5)	(16.0)
UB	(11.9)	(10.6)	(2.90)	13.0

EXHIBIT 11.2 TSR of some MNC stocks				
	TSR (%)			
Company	*1994–98*	*1995–98*	*1996–98*	*1997–98*
HLL	34.2	43.5	45.8	42.1
Bata	(2.5)	40.8	69.2	77.0
P&G	19.9	38.3	47.7	62.8
ITC	17.8	34.7	45.6	32.8
Pfizer	16.4	33.9	34.8	112.0
Nestle	23.2	31.3	31.8	85.9
Glaxo	23.1	30.7	32.2	17.4
Cadbury	23.9	30.2	22.7	36.8
SmithKline Beecham	10.6	23.7	14.6	9.3

Source: Business Line, August 13, 1998 (Prices in August considered for all the years).

Exhibit 11.2. Many stocks have performed well despite bearish market conditions. When the market declined by 31 per cent, the MNC stocks, on an average, appreciated by 22 per cent.

A recent study of 1,000 firms from seven emerging markets (Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea and Thailand) in 1995 finds that diversified firms trade at a discount of 7 per cent when compared to single-segment firms.[20] Further, they find that diversified firms are also less profitable than single-segment firms and that the discount exists only for those firms that are part of industrial groups and for diversified firms with management ownership concentration between 10 per cent and 30 per cent.

Types of Restructuring

A firm is a collection of contracting relationships among claimants. These contracts represent claims on the cash flows generated by the firm's assets. Restructuring is a process by which a firm changes the terms of its contracts. So, restructuring is about reconstructing.[21] In this chapter, I intend addressing the following questions:

- How do managers figure out what kind of restructuring is most appropriate for addressing the particular problems facing the firm?
- How do stock markets react to different types of restructuring?
- How can one estimate the value-creating potential of a particular type of restructuring?
- How do ownership, compensation and responsibilities of management change after restructuring?

Asset Sales

A sell-off or a divestiture involves the sale of a subsidiary, a division or a product line in exchange for cash or securities or some combination thereof. The buyer can be another company or the firm's management (in which case it is called Management Buyout) or another management

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[20] Karl V.L. and H. Servaes. 2002. 'Is Corporate Diversification Beneficial in Emerging Markets?', *Financial Management*, Summer.
[21]This was noted by Gilson S.C. (1998).

team (in which case it is called a Leveraged Buyout). The cash realized from the sale might be used to retire debt or pay a dividend to shareholders.

Often, the divested divisions would have been acquired under another acquisition programme. If companies were acquired to create value, then how can acquisitions and subsequent divestitures both be rational? The shareholders of the selling company win only if the selling price is greater than the present value of expected cash flows from the division/company, that is, the asset should be worth more to the buyer than to the seller. This is possible if the asset can provide synergies to the buyer not available to the seller. If the buyer can generate higher cash flows from the business or lower the cost of capital, the value of the division increases. Another plausible reason for divestitures is that they enable the selling company to correct past mistakes. Those assets that no longer fit the company's portfolio may be divested, thereby unlocking shareholder value.

It is logical to divest those divisions that do not earn the cost of capital. To decide whether the firm should continue with an existing division, liquidate or sell it to someone else, a manager should estimate the value of the division not only to the firm but also to other potential acquirers. There are three measures of value. The first is the continuing value, which is the present value of the expected cash flows from continuing with the investment through to the end of the asset's life. The second is the liquidation value, which is the cash flow a firm will receive if it terminated the division today. The third is the divestiture value, which is the price paid by the highest bidder. The decision to continue, liquidate or sell depends on which of the three values is the highest. If the continuing value is the highest, the firm should continue with the division even if the division is not earning the cost of capital. If the divestiture value is the highest, then there is a potential for value creation by selling the division to the highest bidder.

The decision to sell a company/division is as important as buying one. But selling generally lacks the kind of planning that goes into buying. Quite often, the decision and the choice of the buyer is arbitrary, resulting in a raw deal for the selling company's shareholders. It is important to understand that selling needs the same set of skills normally required for buying. At some point in time, the executives of a company may have to

take the decision to divest a division. There is nothing wrong in selling a division if it is worth more to someone else. The decision to sell may be prompted by poor growth prospects for a division or consolidation in the industry, that is, divisions with low productivity are more likely to be sold. Given the fact that the need to sell may arise any time, it makes sense for executives to be prepared. More specifically, managers need to know their company's worth. Consideration may be given to strengths and weaknesses in production, marketing, value of synergy to potential buyers, value of brand equity, and the like.

Brand Equity is created by a combination of brand loyalty, consumer awareness, perceived quality and brand associations. Although companies have long realized the value of brands, the interest in valuing them is recent. Brand valuation quantifies the benefits of brand equity to the owner of the brand. Appendix 1 describes a methodology for valuing brands.

As pointed out earlier, divestitures should become a part of a company's strategy. To implement a proactive programme:

1. Prepare the organization by explaining to employees the rationale for the divestiture and why it is necessary to divest. Analyze specifics of business and business needs. Assess likely demand for the business under various configurations. Implement any organizational restructuring necessary prior to sale to make the business more attractive to buyers.
2. Establish an objective criteria for identifying potential candidates for a divestiture. The criteria may be purely financial or otherwise. While identifying candidates, consideration may be given to its legal, tax and other implications. Set a floor price for sale.
3. Communicate the decision to employees once the sale is through.
4. Evaluate alternate offers and sell to the most suitable acquirer.[22]
5. Without wasting much time, invest the sale proceeds in attractive business opportunities and create a new combination of businesses.

Empirical Evidence on Sell-Offs

Academic studies of divestitures have found that, on an average, stock markets react positively to divestitures and shareholders experience

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[22]The most suitable acquirer is usually the highest bidder.

abnormal returns. Linn and Rozeff (1984) examined the price reaction to announcements of divestitures by firms and reported an average excess return of 1.45 per cent for 77 divestitures between 1977 and 1982.[23] Exhibit 11.3 presents the results of other studies on sell-offs. Studies which have looked at the operating performance of parent firms after divestitures, report that improvements in operating margins and return on capital, and stock prices of divesting firms, tend to outperform the market. When companies dispose off assets, they convey information not only about the value of the asset but also on the intended use of the asset and the financial health of the seller. Hence, it is not clear what one can conclude from these studies.

EXHIBIT 11.3 Empirical evidence on sell-offs				
Authors	*Period studied*	*Sample size*	*Stock price impact on announcement day (%)*	*Stock price impact on announcement through completion of sale (%)*
Hite, Owers and Rogers	1963–1978	55	1.50	2.30
Klein	1970–1979	202	1.10	2.40

An Illustration

Sears, Roebuck and Co. diversified into financial services by acquiring Dean Witter and Coldwell Banker Real Estate group in 1981. Although these subsidiaries were doing well, the capital-intensive nature of these businesses and the debt burden were pressurizing the company to restructure. Throughout the 1980s, the company's ROE never touched the 15 per cent mark; the catalogue business was losing US$ 160 million a year; its chain of department stores was being outclassed by Wal-Mart and K Mart; and the stock price did not reflect the value of the financial services subsidiaries. In addition, shareholder activist Robert Monks had chosen Sears as one of the targets of his agitation campaign to improve performance.

Most companies would probably sell the unprofitable divisions and invest the proceeds in the more profitable ones. Sears did the opposite.

[23]More recent studies have documented conflicting results.

In 1993, Sears sold 20 per cent of Dean Witter and spun the rest off to shareholders; sold 20 per cent of Allstate Insurance in the largest IPO in US history as well as its Coldwell Banker residential real estate business and its own mortgage company, and it streamlined its merchandizing operation by dropping the 97-year-old catalogue business, and closed down unprofitable stores. The company raised US$ 4 billion and cut its debt from US$ 37 billion to US$ 17 billion. By the end of the year, Sears' share price had climbed by more than 80 per cent from a 1990 low of around 25 to almost 60. The company's total share value rose from US$ 12 billion to US$ 28 billion.

Spin-Offs

Recent years have witnessed a large number of spin-offs. In the US alone, US$ 100 billion of spin-offs have been done between 1991 and 1996, with another US$ 77 billion pending.[24] For example, AT&T spun off Lucent Technologies and NCR in 1996, and Westinghouse Electric spun off its industrial businesses from CBS Inc. which it had purchased in late 1995 for US$ 4.2 billion. In Europe, about 170 spin-offs have been done between 1995 and 2000. In a spin-off, one or more divisions of a listed company are detached from the parent and the parent company distributes shares in a controlled subsidiary to its shareholders, pro-rata, as dividend. These entities continue to be owned by the original shareholders of the parent company. The spun-off company thereby becomes a stand-alone company and gets listed on a stock exchange. The announcement of spin-offs is usually accompanied by an increase in the value of the original business, suggesting that investors view the components as worth more than the whole.

A number of explanations have been suggested for such positive reaction.

Conglomerate Discount

Large, diversified groups tend to lose focus and find it difficult to assess the performance of divisions or set realistic financial targets; and spin-offs

[24]Roy Harris. 1996. 'In a Spin', *CFO Magazine*, July.

correct the situation. There is a popular belief that conglomerates trade at a discount to their intrinsic value because investors and analysts find it difficult to understand a complicated combination of businesses and assign a lower price-earnings multiple than what the company deserves. For instance, Du Pont's P/E fluctuates around 18, a valuation more in line with basic chemical activities than with life sciences activities, which the market values at 30–50 times earnings. Spin-offs are based on the premise that investors can better understand and evaluate a pure-play (single line of business). The quality of information conveyed to managers regarding product market strategy, business and management also improves after the shares of the detached subsidiary gets listed on a stock exchange. Due to separate financial reporting of the erstwhile division, the quality of information disclosure improves after a spin-off and the discount disappears. The prime reason why Westinghouse Electric, a multi-industry company, did not outperform the market is that it had a capital structure and capital need that did not fit either of the businesses– a very high cash flow, low capital-investment media business with high margins and high earnings multiples, and a much slower-growth power business which requires a lot of working capital. The power business was a drag on the media business because of which the stock market was assigning a P/E multiple less than the sum of the theoretical multiples for the two businesses. The spin-off of CBS was intended to provide the valuation of a pure media company.[25]

Improved Analyst Coverage

The stock market performance of a company is influenced, at least partly, by security analyst recommendations. Typically, security analysts are required to track 25–30 companies. This leaves little time to get to know the complexities of a small division of a large company because of which the growth prospects of the division might not be fully reflected in the price of the company's stock, that is, analysts are less likely to cover conglomerates. When companies spin off their divisions, the new company may attract new coverage which may correct the discount on

[25]1997. 'Split Decision', *CFO Magazine*, April.

the stock price. A recent study reports that there is indeed an increase in analyst coverage after a spin-off.[26] In the two fiscal years after the break-up, mean analyst coverage at the sample firms increases from approximately 17 to 24 analysts. Gilson et al. also document significant decreases in analyst earnings forecast errors. Their findings suggest that companies experience improvements in the quality of analyst coverage around spin-offs, carve-outs and targeted stock offerings.

Attracting New Investors

Investors have their investment preferences regarding the companies and industry groups they wish to invest in. Assume that a company has two divisions–pharmaceuticals and software. This company appeals to investors who want to invest in *both* pharmaceuticals and software. There is no reason why all potential investors should be interested in both. A multi-divisional company may not attract as many investors as it would otherwise attract as two separate pure-plays because of this drawback. Spin-offs correct the situation by creating pure-plays. Spin-offs indeed attract new investors.[27]

Some of the commonly-cited rationale for spin-offs include:

- Creating pure-plays to cure undervaluation.
- Separating out divisions which do not have synergy.
- Reducing risk.

As pointed out earlier, spin-offs create pure-plays which investors can understand better. Consequently, the sum of the (equity) values of the separated entities is usually more than the value of the erstwhile conglomerate.

At times, a company would have been acquired due to synergy in operations. Over time, due to changes in the company's strategy or business environment, it might no longer be attractive to operate both

[26]Gilson, S., P. Healy, C. Noe and K. Palepu. 1998. 'Information Effects of Spin-Offs, Equity Carve-Outs and Targeted Stock Offerings', Working Paper, Harvard Business School, June.

[27]Subramaniam, S., P. Anslinger and S. Klepper. 1999. 'Breaking Up is Good to Do'. *The McKinsey Quarterly* Number 1.

the units under one roof, especially if one of them is not doing well. A spin-off is desirable in such circumstances.

Assume that one of the divisions of a company has incurred substantial environmental liability due to the nature of the business (for example, chemicals). It might be better to isolate the subsidiary so that the entire company is not affected. In the 1990s, American Cyanamid came under pressure to focus on its core business and improve performance.[28] The chemicals operation was not doing well and was not in line with the company's mission of becoming a life sciences company. The chemicals operation was spun off into a separate entity named Cytec Industries. The newly-formed company was forced to carry substantial environmental and retiree liabilities. Contingent liabilities must be taken into account at the time of spin-off. Otherwise, the shareholders of either the parent or the subsidiary may file suit against the other at a later stage, citing damages due to the spin-off.

Examples

Thermo Electron Corporation is a global leader in providing technology-based instruments, components and systems that offer total solutions for markets ranging from life sciences to telecommunications to drug and beverage production. In October 2001, Thermo Electron Corporation announced that its board of directors had approved the spin-off of its wholly owned Viasys Healthcare subsidiary as a dividend to Thermo Electron shareholders on record. After the distribution, Thermo Electron no longer owns shares of Viasys Healthcare. Viasys Healthcare designs, manufactures and markets a variety of medical devices, instruments and specialty products for use in healthcare services. According to the spin-off plan, Thermo Electron would distribute 1,428 shares of Viasys Healthcare common stock for each share of Thermo Electron.

Vendex, a conglomerate in the Netherlands, spun off its recruitment and retail interests into two new companies–Vendior and Laurus. Vendex itself was left as a department-store business.[29] The transaction is shown thus:

[28]Wruck, K.H. and S.P. Roper. 'Sink or Swim? Cytec Industries' Spin-Off', *Harvard Business School Case No. 5–897–053.*
[29]Euromoney, January 2000.

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                              Vendex
       ┌────────────────────────┼────────────────────────┐
   Department                Recruitment                Retail
     Stores                     │                          │
                                │                          │
                          Acquired French            Acquired 3
                          Recruitment Co.             Retail Cos.
                                │                          │
                                │                          │
                           Spun off as                Spun off as
                             Vendior                     Laurus
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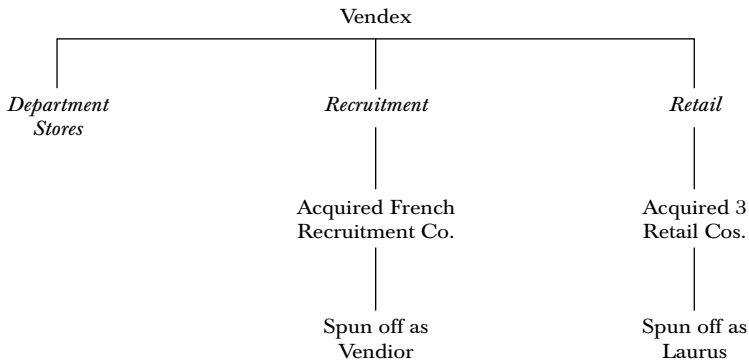
To reiterate, in a spin-off,

• The parent relinquishes ownership and control.
• Current shareholders retain share in the parent.
• No cash payment is involved.
• The current managers of the division are usually asked to run the new company; and often, managers are given substantial equity interest in the new company.

Often, subsidiaries will not have the financial or strategic planning skills although they may have experience in manufacturing and sales. The independence through a spin-off brings in additional responsibilities. So, retaining talented managers in the initial years is crucial for a spun-off entity. One way to achieve this is to award carefully designed incentive schemes. Thermo Electron, for instance, provides stock options to business unit managers, which allow them to share about 1–7 per cent of the upside value in the unit.

Empirical Evidence on Spin-Offs

One set of academic studies have documented the impact of spin-off on the parent company's stock. Schipper and Smith (1983) examined 93 firms that announced spin-offs between 1963 and 1981, and reported an average excess return of 2.84 per cent in the two days surrounding the announcement. These studies also find that large spin-offs generate excess returns than small spin-offs and those with the expressed aim of specialization realize significantly larger returns than those done for

EXHIBIT 11.4				
Empirical evidence on spin-offs				
Authors	*Period studied*	*Sample size*	*Stock price impact on announcement day (%)*	*% of positive reaction*
Hite and Owers	1962–1981	123	3.30	69
Schipper & Smith	1963–1981	93	2.80	67

Total returns to shareholders (%) *2 year compound annual growth rate* *(34 spun off firms randomly selected)*		*Boost in P/E multiple created by restructuring*		
			P/E at the time of subsidiary issue	*Change in P/E relative to market*
Spun off firms	26.9	Parent	12.2	7
S&P 500 index	17.2	Subsidiary	14.0	15
Russell 2000 index	14.1			

Source: McKinsey

other reasons. Exhibit 11.4 presents the empirical evidence on spin-offs. At the time of spin-off, the company's management must decide on the allocation of assets and liabilities to the parent and the subsidiary. Assume that a company has two divisions A and B. The relevant financial details

EXHIBIT 11.5	
Before the spin-off	
Liabilities and equity	*(US$ million)*
Bank loans @7%	300	
Bonds @ 10 %	700	
Equity	1200	2200
Earnings	
EBIT:	
Division A	87	
Division B	104	191
Interest	
On bank loans	21	
On bonds	70	91
PBT	100	
Taxes @ 34 %	34	
PAT	**66**	
No. of shares (m)	120	
P/E multiple	23.60 X	
Market cap. US$ m	1560	
EBIT/Interest	2.09 X	

of the company are given in Exhibit 11.5. The company's officials believe that the market is undervaluing the company because the less profitable division (A) is a drag on division B. They decide to do spin-off. The spin-off plan is presented in Exhibit 11.6.

EXHIBIT 11.6		
The spin-off plan		
Liabilities and equity (US$ million)	Company A	Company B
Bonds @ 10 %	800	
Equity	600	600
Bank loan @ 7 %	———	300
	1400	**9 00**
Earnings		
EBIT:		
Division A	87	
Division B		104
Interest	———	———
On bonds	80	21
PBT	7	83
Taxes @ 34 %	2.38	28.22
PAT	**4.62**	**54.78**
P/E multiple	15X	30X
Market Cap. $m	222.2	1769
EBIT/Interest	1.08 X	4.95 X

The market assigns a higher multiple to company B than was prevailing before the plan and a lower multiple to A. The value created by the spin-off = post-spin-off market capitalization–pre-spin-off market capitalization.
= US$ (222.2 + 1,769)–1,560 million = US$ 431.20 million.

The (*ex-ante*) theoretical market value of the divisions may be estimated by multiplying the average P/E multiple of comparable companies in the respective industry groups and the theoretical earnings per share of the two divisions. That is,

Market value of division A = EPS_A * $P/E_{(industry\ average)}$
Market value of division B = EPS_B * $P/E_{(industry\ average)}$

To estimate the EPS for the divisions, debt (interest) and overhead expenses have to be allocated to the two divisions. The amount of overhead expenses allocated to a particular division obviously affects

its earnings. This is one of the contentious issues in a spin-off. Note that the interest coverage ratio of company A is only 1.08 as opposed to 4.95 of company B. What does it suggest? One of the potential sources of gain in a spin-off (approximately 431 million in this case) is the transfer of wealth from bondholders to shareholders, assuming that debt is not assigned to the spun-off entities in a fair manner (in which case, a bondholder is neither better off nor worse off). The allocation of liabilities to the spun-off entities should take into consideration the earnings potential of the division. A division that does not have adequate growth prospects when saddled with debt, will, for obvious reasons, go down. The bondholders suffer losses because the collateral base has shrunk and the division's ability to service debt is limited. The possibility of wealth transfer can pit bondholders against shareholders, leading to lawsuits. Bond covenants prohibit certain events like mergers and acquisitions, and sale of assets, because these actions alter the asset (collateral) base which leads to wealth loss.

In 1992, due to recession in the industry and worsening financial condition, Marriott Corporation announced its decision to spin off its lodging management, food service and distribution businesses into a new entity called Marriott International. Its other business ownership of hotel and other properties would be called Host Marriott. In other words, Marriott Corporation would become two companies. According to the spin-off plan, Marriott International would manage the properties of Host Marriott on a contract basis and much of the debt would be concentrated in Host Marriott. The pro forma balance sheets of Marriott International and Host Marriott are given in Exhibit 11.7. The stock market reacted positively to the spin-off, but the bond price fell because of deterioration in interest coverage and downgrading of the company's bonds by the bond-rating agencies. Unfortunately, the covenants did not cover an 'event risk' like spin-off, and a company normally has no responsibility to safeguard the interests of bondholders other than by observing indenture provisions. This is a clear case of wealth transfer from bondholders to shareholders.

Within a month, several law suits were filed against Marriott Corporation and bondholders formed committees to block the transaction. Negotiations with the bondholders' committee resulted in major changes in the plan. Marriott Corporation, among other things, agreed to:

| EXHIBIT 11.7 | | | |
| The initial spin-off plan of Marriott Corporation | | | |
	Marriott Corp.	*Marriott Intl.* *(pro forma)*	*(US$ million, except ratios)* *Host Marriott* *(pro forma)*
Assets			
Current assets	**1230**	**1130**	**250**
Property	**3672**	**360**	**3310**
Other assets	1431	870	1060
Total	6333	2360	4620
Liabilities and equity			
Current liabilities	1189	1130	210
Long-term debt	2891	20	2870
Other liabilities	1500	690	1310
Shareholders Eq.	753	520	230
Total	6333	2360	4620
Income statements			
Revenue	8331	7426	1656
Operating profits	478	314	148
Net income	82	145	−66
EBITDA/Interest	2.6	20.3	1.3

Source: Robert Parrino, 1997, 'Spin-offs and Wealth Transfers: The Marriott Case'. *Journal of Financial Economics*, 43.

- Transfer of US$ 450 million of additional debts and assets from Host Marriott to Marriott International.
- Exchange existing bonds for new ones, paying higher interest rate and with extended maturities.
- Pay for the legal expenses incurred by the bondholders' group.

Exhibit 11.8 presents the final spin-off plan.

Long-Run Performance of Spun-Off Firms

Some argue that the increase in value of a company in a spin-off is primarily due to the information problem a spin-off solves and not due to real operating improvements in the spun-off entity. Since stock markets react positively to spin-offs, if stock markets are efficient, we would expect the spun-off entities to do well in the long run. Empirical studies of spin-offs have found that spin-offs are indeed accompanied by substantial improvements in operating performance and profitability. These studies have recorded the growth rate in accounting variables like net

	EXHIBIT 11.8		
	The final spin-off plan of Marriott Corporation		
	Marriott Corp.	*Marriott Intl. (pro forma)*	*(US$ million, except ratios) Host Marriott (pro forma)*
Assets			
Current assets	*1496*	*1250*	*301*
Property	*3461*	*772*	*2689*
Other assets	1453	995	898
Total	6410	3017	3888
Liabilities and equity			
Current liabilities	1496	1280	394
Long-term debt	2732	899	2313
Other liabilities	1397	400	794
Shareholders Eq.	785	438	387
Total	6410	3017	3888
Income statements			
Revenue	8722	7787	1691
Operating profits	483	331	152
Net income	85	136	–44
EBITDA/Interest	2.8	6.5	1.8

Source: Robert Parrino, 1997. 'Spin-offs and Wealth Transfers: The Marriott Case', *Journal of Financial Economics*, 43.

sales, operating income, total assets and capital expenditure from three years before the spin-off to three years after the spin-off.[30] The results are:

Accounting measure	Growth rate (percent)	Adj. growth rate[31] (per cent)
Net sales	55	15
Operating income	72	24
Capital expenditures	61	39
Total assets	53 per cent	20 per cent

Changes in variables—raw and industry-adjusted—for the period 1965–91					
Variable	*–3 to–1*	*–2 to–1*	*–1 to +1*	*–1 to +2*	*–1 to +3*
Net sales					
Median per cent change	21.88	7.36	23.03	37.08	54.89
Median industry-adjusted	5.31	–0.14	5.70	2.37	15.25
Operating income before depreciation					
Median (per cent) change	22.36	17.00	35.16	42.80	72.09
Median industry-adjusted (per cent)	0.86	8.11	8.71	15.47	23.70

[30]Cusatis et al. (1994).

[31]Growth rate for the company–Median growth rate for 12,000 companies listed on Compustat.

Another study by McKinsey suggests that there is a substantial increase in return on invested capital and revenue growth in the two years after the spun-off units begin trading.[32] The improvement in operating performance is probably due to the fact that spin-offs enable the corporate office to separate out winners and losers, and provide better incentives to winning managers. Another benefit of spin-offs is that they facilitate transfer of assets to those who value them most. Related studies have also found that the shareholders of both the parent and the spun-off units experience positive, abnormal returns after the spin-off. Given next is the common stock returns for 199 spin-offs for the 1965–96 period.[33] Returns are reported from one month after the initial day of trading to 6, 12, 18, 24 and 36 months.

Holding period					
	1–6	*1–12*	*1–18*	*1–24*	*1–36*
Mean return	9.2%	19.6%	31.4%	53.8%	73.7%
Matched firm-adjusted returns	2.8	6.8	14.6	24.7	29.5

The Choice between Sell-Offs and Spin-Offs

A comparison between sell-offs and spins-offs is in order:

- Sell-off is the desirable alternative if another party is willing to pay more than what the entity is worth on a stand-alone basis. Spin-off is the only alternative if there are no buyers.
- Spin-offs are tax-favoured in the US, the UK, and many other countries. A company can avoid taxation if it satisfies the following requirements of the Internal Revenue Code in the US:
  - The parent must have owned at least 80 per cent of the outstanding shares of the subsidiary for at least five years.
  - The parent must distribute at least 80 per cent of its stock in the subsidiary.
  - The transaction must have a valid business purpose.
  - Both the parent and the subsidiary must carry on with their businesses for at least five years.

[32]Subramanian S., P. Anslinger and S. Klepper. 1999. 'Breaking Up is Good to Do', *The McKinsey* Quarterly Number 1.
[33]Miles and Rosenfeld (1983). Also see Schipper and Smith (1983), Hite and Owers (1983).

In case of an asset sale, the parent company recognizes gain or loss equal to the difference between sale proceeds and tax basis in a subsidiary. Parent firm shareholders recognize no income or loss unless proceeds are distributed as dividend. In America, any company that has used the proceeds of the sale of a portion of its business that results in 20 per cent reduction in net assets, gross revenues and employees, to buy back stock or make a special pro-rata distribution can designate proceeds of the sales of businesses as 'partial liquidations'. With this designation, shareholders are not only taxed at the capital gains rate rather than the dividend rate, but also can treat distributions as if they result from a stock sale even though no stock is exchanged.[34]

- Spin-off is the desirable alternative when there is no synergy between a company's different businesses.
- An asset sale generates cash, whereas spin-offs do not. So, a company in need of cash may prefer a sell-off.

As far as financial accounting is concerned, a parent accounts for a spin-off transaction as a stock dividend, but recognizes gain or loss equal to difference between sales proceeds and book value in case of an asset sale. The Securities Exchange Act of 1934 requires that the parent file Form 10 with the SEC. The company must provide historic financial statements showing the impact of the spin-off on the parent and the subsidiary. Companies often seek legal counsel on the tax status of the spin-off. Just as in an IPO, the parent must file an application for listing the subsidiary on a stock exchange.

Equity Carve-Outs

In an equity carve-out, a public company sells a portion of its stake in a subsidiary to the general public in an initial public offering. The carved-out subsidiary becomes an independent company with its own board and management. The parent continues to provide administrative support. A carve-out differs from a spin-off in at least two ways. First, a spin-off results in the distribution of subsidiary shares to existing shareholders, whereas a carve-out is a sale of subsidiary shares to general investing public

[34]Corman L. 1997. 'A Dirty Word? Partial Liquidation doesn't Sound so Bad to Shareholders Who have Enjoyed the Tax Benefits', *CFO Magazine*, July.

which brings in new capital. Second, in a spin-off, the parent relinquishes control over the subsidiary, whereas a carve-out creates a public minority interest. Typically, the parent continues to hold a substantial portion of the subsidiary's shares. Maintaining a majority ownership over the subsidiary helps retain control. Indeed, the accounting and tax consolidation of the carved-out subsidiary with the parent depend on the extent of retention of ownership. Given next is the schedule of ownership stake and the associated treatment.

Ownership stake	Consolidate
≥80 per cent	For tax and accounting purposes, deduct 100 per cent of dividends received for tax
50–80 per cent	For accounting purposes, deduct 80 per cent of dividends received

Since a carve-out involves selling of securities to the general investing public, the company must file a registration statement with the concerned authority (SEC, in case of the US). The proceeds can be retained by either the parent or the subsidiary. In short, a carve-out creates a public market for the subsidiary stock. Thermo Electron, Enron, Genzyme and The Limited have carved out in the recent years. In 1998, Du Pont carved out roughly 30 per cent of its oil subsidiary Conoco Inc. in a public offering, raising US$ 4.4 billion. It is one of the biggest carve-outs of all times in the US.

Rationale for Carve-Outs

There are several benefits from a carve-out. First, a carve-out brings new capital to the parent or the subsidiary. So, an equity carve-out is the preferred alternative when the subsidiary has high growth opportunities and investment needs. Secondly, a carve-out, like a spin-off, creates a public market for the subsidiary's stock and hence, provides for public scrutiny, that is, the subsidiary is answerable to investors. This, usually, improves the performance of companies. Equity carve-outs are also usually associated with pay-for-performance incentive plans in which the managers of the carved-out units are awarded equity interest in their own company rather than the parent. This helps in retaining managerial talent.

This is probably the reason for superior performance of carve-outs. Indeed, there is evidence to prove that those companies which do not change their compensation system do not do well. Like spin-offs, carve-outs also attract new investors.

Empirical Evidence on Carve-Outs

Unlike seasoned equity offerings, carve-outs elicit positive response from stock markets. A study by Schipper and Smith (1986) suggests that, on an average, the stock price of the parent company increases by 2 per cent on the announcement of the carve-out. They also report that, in their sample of 76 firms, 26 of the carved-out units were re-acquired by their parents, seven were spun off and 15 were divested. Recently, McKinsey examined the performance of carved-out subsidiaries (between 1985 and 1995). Over a 3-year-period, the subsidiaries in their sample showed average compound annual returns of 20.3 per cent. They also found that those companies that repeatedly sold stakes do even better. Three years after the carve-out, the subsidiaries showed annual returns of 36.8 per cent, while the parents themselves experienced annual returns of 31.1 per cent. Exhibit 11.9 presents the results of empirical studies on carve-outs.

EXHIBIT 11.9 Empirical evidence on equity carve-outs			
Author	*Period studied*	*Sample size*	*Stock price impact on announcement day (%)*
Schipper and Smith	1963–1983	76	1.80
Average shareholder return (%)			
	Year 1	**Year 2**	**Year 3**
Subsidiary carve-out	34.2	25.2	20.3
Russell 2000 index	11.2	11.4	10.7
Difference	23.0	13.8	9.6
Sample size	119	105	76
Source: McKinsey			

Academic studies have also documented the growth rate for median accounting variables for all available carve-outs on a raw and on an industry-adjusted basis. The results are presented here:

Years relative to carve-out's first trade			
	−2 to −1	*−1 to +1*	*−1 to +3*
Net sales (US$ million)			
Median raw growth rate	11.63%	41.30%	59.39%
Industry adjusted rate	3.18%	20.66%	29.79%
Operating income before depreciation			
Median raw growth rate	15.57%	52.72%	67.99%
Industry adjusted rate	−2.11%	27.84%	35.58%

The Choice between Spin-Offs and Carve-Outs

A comparison between spin-offs and carve-outs is in order:

- Both spin-offs and carve-outs cure undervaluation. But (we would expect) those firms which are confident of their quality would do a carve-out, since a public offering of shares as in a carve-out involves scrutiny by financial intermediaries and entails higher cost. In other words, low-quality firms are more likely to resort to a spin-off.
- A carve-out, as mentioned earlier, involves public sale of shares which results in an inflow of capital. The cost of doing a carve-out, for this reason, is substantially more than that of a spin-off.
- Academic studies find that carve-out subsidiaries perform better than spun-off firms.

Targeted Stocks

Targeted stocks, also called tracking stocks, are a class of parent company stock that track the performance of a particular division, line of business, geographic segment or product line. The control of the division in question remains in the hands of the company's management, unlike in spin-offs and carve-outs in which a new board and management team is created. Further, the assets of the division are not separated from those of the parent company as in a spin-off. The revenues and earnings of the divisions are reported separately and dividends are computed on the basis of earnings of the targeted division. As with spin-offs, assets and liabilities are allocated to divisions. But the allocation, in case of targeted stocks, is for financial reporting. The legal titles to the assets and responsibility for the liabilities will not be affected by allocation. It is important to understand

that although the tracking stock tracks the performance of a division, the stock is a legal claim on the company and not on the division. To sum up, in a spin-off, there are two (or more) stocks and two (or more) companies, whereas in a targeted stock there are two (or more) stocks and one company. Exhibit 11.10 presents the difference between a conglomerate and a targeted stock structure. Targeted stocks are usually distributed pro-rata to existing shareholders as special dividend although companies may issue tracking stocks to outside investors.

EXHIBIT 11.10	
Conglomerate structure versus targeted stock structure	
Common stock structure	*Targeted stock structure*
• Valuation on the basis of performance of all divisions	Valuation on the basis of the unit being tracked.
• Common voting rights	Differential voting rights
• Fixed dividend rights	Differential dividend rights.

The objective of the targeted stock structure is to realize some of the benefits of 'pure plays' while at the same time preserving some of the advantages of integration. In other words, a targeted stock structure is a compromise between the conglomerate structure and a spin-off. After the issue, the company continues to provide consolidated financial statements in addition to separate statements for each class of stock created. USX Corp., Genzyme, K Mart, Ralston Purina and Fletcher Challenge, among other companies, have issued tracking stocks.

USX Corp., which started off as a steel manufacturer, diversified into energy business by acquiring Marathon Oil. During the 1980s and the 1990s, the company acquired and sold both steel and energy properties. In 1991, the company decided to issue two new classes of common stock: USX-US Steel which was intended to reflect the performance of the corporation's steel business and USX-Marathon group stock to reflect the performance of the company's energy business. In 1992, the company created a third class of common stock, USX-Delhi group which was intended to reflect the performance of Delhi Gas Pipeline Corporation and certain related companies. The Delhi stock was redeemed in 1998 as a result of the sale of this business to Koch Industries in 1997. The company explained that the tracking stock structure would enable the company to retain the benefits of integration, that is, co-insurance, at the same time creating pure-plays.

Setting Voting Rights, Dividends and Liquidation Rights

Because the targeted stock structure creates different classes of shares, the dividend, voting and liquidation rights of different classes of shareholders vary. The issuer must design these features at the time of issue. A typical design is discussed next.

The voting rights of a class of stock depend on the relative market value of the group. For instance, if the market value of division A is twice that of division B, then the shareholders of A will receive twice as many votes as the shareholders of B. In the event of liquidation of the business, the proceeds are shared by the shareholders in proportion to the relative market value of the stock.

Dividends are set on the basis of long-term earning prospects and cash flow needs of the division and dividend policy of other comparable companies. Dividends are either set at a fixed level and then allowed to float with income or set as fixed percentage of net income. Appendix 2 presents the key features of targeted stocks.

Advantages and Disadvantages of Targeted Stocks

Since targeted stocks create pure-plays like spin-offs, investors find it easy to value the businesses. This should eliminate the discount on the company's stock. As dividends on a class of stock are set on the basis of the performance of that division, the structure allows for differential dividend policy among shareholders, which would not be possible under a conglomerate structure. Further, managers can be awarded incentives tied to the performance of the division. Tracking stocks also enable companies to acquire through relevant divisions.[35] Since the units are physically tied, the losses from one business can be set off against profits from other divisions, thereby saving taxes. A tracking stock structure preserves the co-insurance effect of diversification which could reduce the cost of debt because the assets of the entire company (not just the division) continue to back the liability. If everything about targeted stocks is great, why do we not see more of targeted stock offerings?[36] Unlike a spin-off which creates two boards, a targeted stock has a single board responsible for

[35]For instance, Bell South was considering a tracking stock for its wireless unit which could be used as a currency to buy more wireless companies like VoiceStream Wireless Corp.

[36]About 18 companies had proposed 24 issues up till 1997.

all the units. Since the board has discretion over allocation of common costs among the units, the management can, at least in theory, favour one division to the detriment of other divisions. The allocated costs reduce the earnings and, hence, dividends of a division. This could give rise to costly conflicts among managers (and shareholders). Likewise, management has the discretion over appropriation of profits. If the profit is invested in the more profitable unit, the shareholders of that division get higher dividends in future (because dividends are a function of future, higher profits) and the shareholders of other units do not get a penny. Similarly, if the profit from the profitable unit is used to grow the unprofitable units, the shareholders of the former suffer. Tracking stocks can pit classes of shareholders against one another, leading to lawsuits. General Motors had issued a letter stock to the shareholders of Hughes Electronics division (H class share). If General Motors were to sell its Hughes Electronics subsidiary, its shareholders were to receive General Motors common shares with a market value equaling 1.2 times the prior market value of their class H stock. Further, the shareholders of class H stock would not be entitled to any price appreciation due to the announcement of the transaction. When GM sold parts of Hughes, holders of H shares sued GM's board complaining of unfair treatment.[37]

A number of companies adopting tracking stock structure subsequently eliminate them. Tracking stocks may be eliminated through an asset sale, spin-off or retirement. In October 2001, USX reversed its earlier decision of creating tracking stocks and announced a tax-free spin-off of the steel business into a publicly-traded company to be known as United States Steel Corporation. The company's Chairman explained that separating the two businesses would give each company more flexibility in expanding their respective business through stock-based acquisitions, and enable the new companies to focus on their core businesses, precisely the same reason given for creating tracking stocks!

A Case Study: Steel Authority of India Limited

In February 2000, Arvind Pande, the Chairman of Steel Authority of India Limited (SAIL), was given government approval to go ahead with the proposed restructuring of SAIL. Under the plan, SAIL would bring down its debt-equity ratio as well as reduce its stake in non-core businesses

[37]'Is AT&T Ready for Lift Off ?'. *Business Week*, 13 December 1999.

and focus on the core area of its operations. A restructuring package to the tune of INR 84.54 billion was offered by the Government of India (GoI) to assist SAIL back to profitability. SAIL was the largest producer of steel in India as well as one of the 'navaratnas' (nine gems) among PSUs (Public Sector Units) identified by the government on the basis of size, performance, nature of activity, future prospects and potential for becoming a global player.[38]

In the News: When 2+2 = 5

When AT&T Wireless is spun off from parent AT&T in July, it will be the No. 3 cellular company in the US with US$ 10 billion in revenue and more than 15 million subscribers. It could also end as an independent company with roughly the same market capitalization as AT&T. How can the child be worth as much as the parent? Most analysts estimate that the wireless business represents about US$ 5 to US$ 6 of each share of AT&T, which now sells for about US$ 20. That means when AWE, which now trades as a tracking stock, is fully spun out, AT&T shares should fall to about US$ 15. With 3.4 billion common shares outstanding, post spin-off AT&T would be worth about US$ 50 billion. Meanwhile, AWE, now trading for about US$ 16 a share, should rise as it goes from being a tracker security to one supported by real assets. Suddenly AT&T Wireless, with US$ 2.5 b shares outstanding, has a market cap of US$ 45 billion–just a few bills shy of Ma Bell's. Maybe AT&T's parts really are worth more than its whole...........

Source: Fortune, 16 July 2001.

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[38]The other Navaratnas are NTPC, BHEL, VSNL, Bharat Petroleum, Indian Oil, Hindustan Petroleum, ONGC and IPCL. The government also granted 'mini ratna' status to 39 profit making PSUs. Subject to certain guidelines, these companies enjoy the freedom to make capital expenditure, enter into joint ventures, effect organization restructuring, create and wind up posts below the board level and raise capital from domestic and international markets. To retain the status, these companies should earn profits for three years continuously, have positive net worth, do not seek budgetary support, nor seek guarantees from the government and do not default on repayment of loans or interest to the government. The deteriorating financial performance of SAIL prompted the Department of Public Enterprises to recommend constitution of an inter-ministerial committee of secretaries under the cabinet secretary to review the navaratna status in December 2000.

SAIL was once a model PSU. However, over the years, its profitability eroded and it went on to become one of the highest loss-making units. Steel being a cyclical industry, its fortunes largely depend on the economic conditions prevailing in both India and the World. The late 1990s saw a severe recession, which caused profits and demand to plummet. Competition from Japan and Korea further depressed profits of Indian steel companies, particularly SAIL, which was not a low-cost producer. Furthermore, the fact that there was over-capacity in the industry caused prices to hit a new low. The government was left with little option but to go ahead and restructure SAIL to be more competitive. SAIL appointed international consultants McKinsey and Co. to advice.

Steel Authority of India

After Independence in 1947, the Government of India (GoI) assumed responsibility of developing the core sectors such as steel. The government set up three plants in the 1950s and one in the 1960s. SAIL is a government-owned Public Sector Company formed in January 1973 as a holding company for other companies manufacturing steel and related products. The shares held by the Government of India in various steel companies such as Hindustan Steel, Bokaro Steel, Hindustan Steelworks Construction, Salem Steel and National Mineral Development Corporation were transferred to SAIL. In October 1976, the Durgapur, Rourkela and Bhilai steel plants were transferred from Hindustan Steel to become fully owned subsidiaries of SAIL. SAIL currently operates four integrated steel plants (at Bhilai, Rourkela, Bokaro and Durgapur), one alloy steel plant (at Durgapur) and one stainless steel plant (at Salem). Currently (at the time of writing), SAIL is the 11th largest steel company in the world. Exhibits 11.11 and 11.12 present the financial details and stock price history of SAIL.

During the early 1980s, the company faced several problems and incurred losses. V. Krishnamurthy, the then Chairman of SAIL, turned the company around between 1985 and 1990 with a massive modernization programme. The modernization was aimed to enhance the proportion of steel made by the more efficient basic oxygen furnace method instead of the older open-hearth method. SAIL incurred a cost of Rs 98.50 billion between 1988 and 1992 on modernization. During the initial years of liberalization, the company performed very well and was often cited as

EXHIBIT 11.11
Financials of SAIL (Rs '0 million except ratios)

	1996	1997	1998	1999	2000
Sales	15784	15362	15694	16000	17178
Contribution	3683	3178	3275	2334	2014
Break even sales	11212	11869	12767	20475	2800
Operating leverage	1.77	1.83	2.11	5.84	25.77
Cost per rupee of sales					
Raw materials	49.86	56.56	55.05	51.24	45.78
Wages & salaries	10.56	11.05	11.19	11.85	12.59
EBDIT	2711	2461	2607	1547	1201
PAT	1318	515	133	−1574	−1720
Current ratio			1.18	1.07	0.96
D/E			2.34	3.03	3.16
Gross working					
Capital cycle (days)			313	298	237
Net worth	8109	8469	8557	6988	5264

EXHIBIT 11.12
Stock price history of SAIL
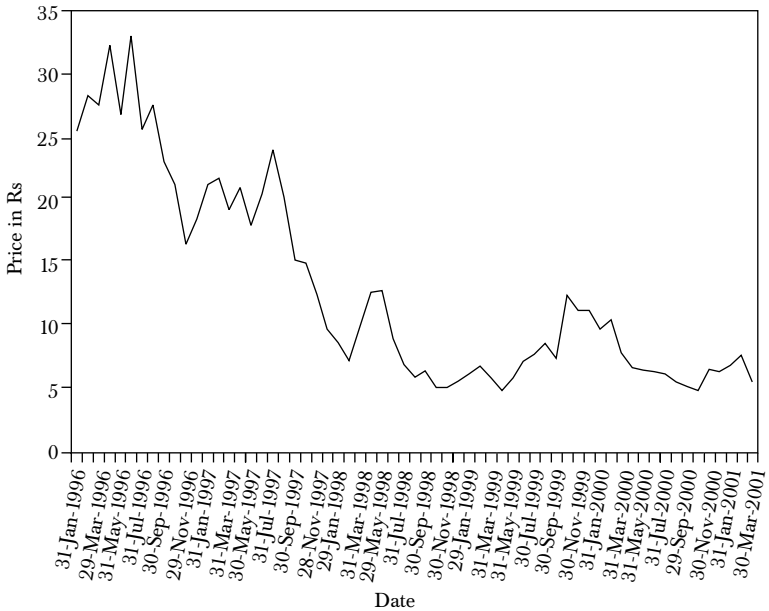
an example of a public sector unit, which did well after liberalization. However, this did not last long and by 1997–98, the company was back in the red and was one of the worst performers of all PSUs. Exhibit 11.13 presents the Return on Capital and incremental MVA (between 1997 and 1998) for all the major public sector undertakings.

EXHIBIT 11.13 **Performance of public sector undertakings**		
Company	*Incremental MVA (Rs '0 million)*	*Return on capital (%)*
ONGC	–214.09	7.53
Indian Oil	–2948.53	8.34
MTNL	–1547.48	8.95
GAIL	–1261.37	18.12
HPCL	559.5	12.39
BHEL	–40.84	11.97
Bharat Petroleum	–592.47	14.30
VSNL	–3176.56	20.27
Container Corp.	–132.1	17.34
IPCL	–2134.46	6.02
NLC	–4905.98	5.69
SAIL	–4835.93	2.97
Source: Business Today, Feb 2000		

Ironically, the modernization programmes at two of its plants became a drain on SAIL. The most important was the implementation delays of between four and six years that led to huge cost over-runs and resulted in high interest and depreciation costs. For instance, the expenditure at both Durgapur and Rourkela plants shot up by over 100 per cent to approximately US$ 1 billion each. That forced SAIL to raise resources through market borrowings. Consequently, its debt burden catapulted from US$ 1 billion in 1989–90, when the two programmes were finalized, to US$ 4 billion a decade later and interest costs rose by seven times to more than half-a-billion dollars. The second reason for the modernization programmes to become a drain on SAIL was that they were based on wrong assumptions. One report revealed that the requirement of hot metal in the post-modernization period would be 2 million tonnes p.a. but no attempt to increase the annual capacity of the blast furnaces was made, which was assessed at 1.35 million tonnes p.a. So the entire downstream investment proved to be futile.

In order to enhance the level of service to the customers and improve the overall organizational performance, the company has been following the Tata Business Excellence Model since 1995. The Tata Quality Management Services (TQMS), a division of Tata Sons Ltd,[39] conducts the assessment of all the Companies in the Group on the basis of this model. There has been a steady improvement in the company's performance as a result of this practice.

SAIL made a successful GDR (Global Depositary Receipt) issue in 1996. The GDR issue came as a shot in the arm for the company which was in desperate need of funds for the second phase of its ongoing modernization programme. This issue came at a time when the government stopped funding SAIL and it had to subsequently meet its requirement through internal sources and issuing bonds with interest rates as high as 16–18 per cent.

In the first round of public sector units' disinvestment, the government divested a small portion of the company's equity. As of 31 March 1998, the Government of India held 85.82 per cent of the company's equity and the financial institutions held 8.86 per cent. GDR holders controlled 3.10 per cent of the equity; individuals 0.75 per cent, mutual funds and banks 0.41 per cent; foreign institutional investors 0.98 per cent; and the balance was held by a few domestic companies. The government had expressed its intention of reducing its stake further to 26 per cent in the due course of time.

The State of the Global Steel Industry[40]

India is among the largest steel manufacturers in the world. The top three steel producers, namely, the Steel Authority of India Ltd (SAIL), Tata Iron & Steel Company Ltd (TISCO) and Rashtriya Ispat Nigam Ltd (RINL) account for about 50 per cent of overall steel production in the country. The steel industry can be broadly classified on the basis of the process of manufacture into primary producers or the integrated steel plants and the secondary steel producers which includes the mini steel plants and induction furnace units. Given next is a small list of prominent steel companies.

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[39]The Tata group is one of the largest business groups in India.
[40]www.nic.com

Name	Technology	Raw materials	Capital cost	Players (INR/MT)
Integrated Steel Plants	Open hearth	Iron ore & coke	25,000	SAIL RINL TISCO
Mini Steel	MBF-EAF	Iron ore & coke	20,000	Essar Steel Ispat Industries Lloyds

Source: CRISIL.

Steel can be manufactured by either of two processes—the blast furnace process or the electric arc furnace process. The integrated plants use the former method. In this process, iron ore is reduced in the presence of coke to get hot metal which is further refined to get liquid steel. Liquid steel is cast directly into blooms, slabs and billets using continuous casting method.

The mini steel plants employ the electric arc furnace method to manufacture liquid steel. In the EAF process, a mixture of scrap and sponge iron is melted in an electric furnace, and then refined to produce molten steel. Molten steel is further cast using the continuous casting or ingot casting route. Semi-finished steel is later processed in different rolling mills to manufacture flat or long steel products. Currently, the blast furnace method dominates steel production worldwide. The EAF method is likely to gain importance in the future due to lower capital costs and flexibility in product mix.

Major players

	SAIL	TISCO	RINL
Plant locations	Bhilai, Bokaro, Rourkela, Durgapur	Jamshedpur	Visakhapatnam
Manufacturing process	Blast furnace	Blast furnace	Blast furnace
Raw material sourcing	Captive iron ore	Captive iron ore and coal mines	Iron ore sourced
Technology	Coal partly imported Some are relatively old plants	Old facilities undergoing modernization	Coal is imported Latest
Marketing	Established network	Established network	Mainly exports
Workforce	Overstaffed	Overstaffed	Automated
Productivity	Low	Low	Low

Source: CRISIL.

The creation of fresh steel capacities is highly capital intensive and this poses a constraint on small and medium size companies. While an economic capacity of 1 million tonnes p.a. in the blast furnace plant is likely to cost Rs 30 billion, an EAF-based capacity of 0.2 million tonnes p.a. is expected to cost about Rs 5 billion. The problem is exacerbated by long gestation periods. The industry depends on the government for major inputs like coal and power besides infrastructure support like Railways for transport.

The location of a steel plant assumes significance in determining its competitiveness. Integrated steel plants require large volumes of iron ore and coking coal, whereas EAF-based facilities need steel scrap and sponge iron for producing liquid steel. The transport of large volumes of raw materials to the plant site results in high inward freight costs and plants have to be situated close to their input sources. Further, they have to be situated near their end users to minimize transportation costs.

In India, a major part of the steel is consumed in engineering applications, followed by automobiles and construction. As industrial investments tapered off after the boom of the late 1990s and auto industry entered recession, the steel industry suffered. The industry has been hit by stagnating demand and also by domestic oversupply and falling prices of steel in the international market. The domestic oversupply has been due to the enthusiasm with which industrial groups went about setting up very large projects with scant attention to expected returns. Most projects were conceived/implemented (primarily for hot-rolled coils) at a gearing of 200 per cent and above, rupee debt borrowings at 18–20 per cent p.a. and price assumptions for HRC of US$ 350/trillion and above. Most producers expected demand growth to average 10–13 per cent, whereas in reality the growth rate never touched 10 per cent.

The oversupply scenario is expected to continue for quite a few years. With low prices and stagnating demand, most of the fresh investments in steel turned unviable. Promoters who mismanaged project implementation, siphoned off funds and started other ambitious projects, which compounded the problem. Net result was large time and cost over-run. Most of these projects can only turnaround if long-term lenders write off a large portion of the debt.

A high debt-equity ratio, low operating margins and the oversupply scenario in the domestic market continue to plague the share prices of

steel companies. The growth of the steel sector is dependent upon the growth of the economy in general and the growth of industrial production and infrastructure sectors in particular. The major reasons for the slow growth in the last few years include:

- Sluggish demand in the steel-consuming sectors.
- Overall economic slow-down in the country.
- Lack of investment by government/private sector in major infrastructure projects.
- Cost escalation in the input materials for iron and steel.
- Continuous reduction in import duty on iron and steel.
- Continuous increase in excise duty on iron and steel.
- Greater competition from imports.
- Dumping of finished steel in the country.
- Adverse conditions in export markets for iron and steel.

Globally, the steel industry is plagued by excess capacity. From 1991 to 2001, the world steel demand grew by just 2.1 per cent p.a. (Exhibit 11.14). Asia's share in the world steel consumption increased from less than 20 per cent in 1985 to about 35 per cent in 1995 and is expected to reach 45 per cent by 2010 (Exhibit 11.15 for world steel consumption). The growth rate in steel consumption is low despite the fact that most industries like automotive, construction and appliances rely on steel partly because steel is being replaced by other materials and improvements in
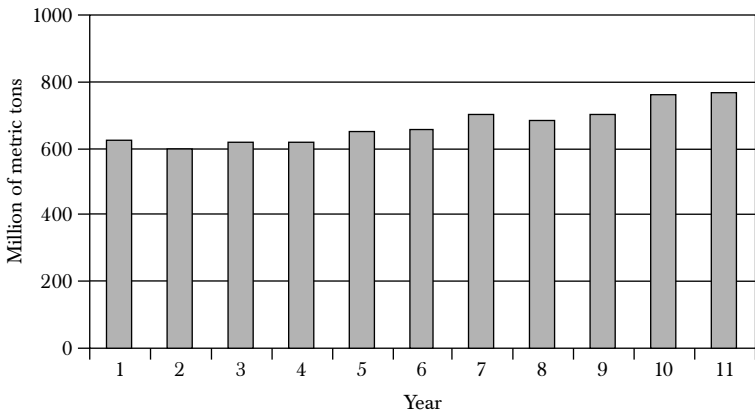
EXHIBIT 11.14
Global demand for steel

EXHIBIT 11.15					
World steel consumption (million tons)					
	1990	*1996*	*1997*	*1998*	*1999*	*2004E*
Americas						
US	86.5	107.1	113.0	119.5	111.4	108.0
Canada	10.2	12.9	15.5	16.1	15.9	15.8
Mexico						
Brazil						
Latin Am ex-Brazil						
Asia						
P.R. China	53.0	92.0	94.0	100.0	105.0	122.0
India	16.9	22.8	22.1	22.9	23.0	23.0
Japan	99.0	83.60	86.0	74.0	69.0	73.0
Korea						
Taiwan						
Pac. Rim						
Europe						
EU 15	119.5	112.9	127.9	136.1	130.2	152.0
Other Europe						
Former USSR						
Other Regions						
Australia & NZ	5.5	6.3	6.6	6.8	7.0	6.8
Africa	12.9	11.2	12.6	13.0	13.5	15.0
Middle East	10.1	12.3	13.9	10.3	11.2	17.5
World Total	**657.4**	**651.4**	**691.6**	**687.6**	**684.7**	**772.6**

Source: Merrill Lynch Equity Research

mechanical properties of steel itself because of which steel buyers use smaller amounts for the same job. As growth was strong, large investments were made. As the Asian economies GDP shrank, their steel consumption declined. A large part of the Asian capacity had been set up in the 1990s. These were highly-leveraged companies that depended on high tonnages to survive. Once installed, it is hard to eliminate capacity because of high exit costs. Often, it is cheaper for integrated plants to avoid temporary shutdowns because of high cost of first idling and then bringing on stream a series of integrated facilities like blast furnaces, steel shops and strip mills. By 1998, the steel industry in most countries were bleeding. Most countries restricted trade by placing quota restrictions or raising import tariffs and many companies merged to consolidate. Thyssen and Krupp, British Steel and Hoogovens, for example, merged to create scale economies. Although worldwide the steel industry is fragmented, consolidation is taking place in several parts of the world, most notably

Western Europe. The top five steel companies in Europe are expected to attain a market share of 80 per cent. A merger itself does not create value unless the combined entity is more profitable as a whole.

Consolidation is expected to increase in the future for several reasons.

- The economics of buying companies are better than building new plants.
- Consolidation improves the bargaining power vis-à-vis its main customers.
- Smaller number of companies results in greater control over capacity and price.

Global cost comparison (US$ per tonne in March 1997)

Country	Liquid steel	Blast furnace	Slab	HR coils
India	205	137	247	312
US	223	159	261	337
Japan	206	151	238	302
Germany	228	170	266	344
UK	205	150	235	300
Korea	196	141	225	276

Source: World Steel Dynamics.

Apart from consolidation, many countries are planning reduction in manpower. For instance, China's steel industry was planning to cut down employee strength from more than one million to 800,000 by 2002 in a bid to improve efficiency.

China's joining the WTO is one of the reasons why the Chinese government has to speed up the restructuring of the steel industry. The steel sector in China began restructuring in 1996. Among 69 of the largest steel producers in the country, the number of employees has already declined to 890,000 in 2000 from more than 1.13 million in 1996. The companies now have a per capita output of 122.8 tonnes against 40 tonnes in 1996. The growth in the Chinese economy has led to increased imports of steel into the country.

Performance Comparison

As pointed out earlier, the steel industry in India is dominated by three companies: SAIL, RINL and TISCO. The Tata Iron & Steel Company

(TISCO) was incorporated in 1907. TISCO manufactures steel and steel related products. It has an installed capacity of 2.7 million tonnes of saleable steel and manufactures a wide range of products which include bars and rods, sheets, hot-rolled strips, hot-rolled coils, structurals and other semi-finished products. In 1999, the capacity was upgraded to 3.2 million tonnes to move towards more value-added products like flats which are deployed in high-end uses like making bodies for automobiles and refineries. The Company operates mines, collieries and quarries to source raw materials for its plants.

Rashtriya Ispat Nigam Ltd (RINL) was incorporated in 1982 as a public sector company to take over the Vizag steel plant project from SAIL. The project faced many hurdles since inception and ran into delays and cost escalation. It took more than 20 years for the project to become operational. Abnormal delays, the mushrooming of rebellious trade unions at the site, wild-cat strike by the contract labour and inadequate resource mobilization blocked the project at various stages. The project was commissioned in 1992. The plant became fully operational in 1994–95. During the period, the cost of the project went up from Rs 25 billion to Rs 85 billion. Much of the increased costs were met through loans from financial institutions and the government. As a result of the huge debt burden, the good performance of the company does not get reflected in its financial results. The company's interest expenses are almost 15 per cent of revenues. It resulted in huge losses despite making operating profit. The company almost filed for bankruptcy in 1997. To allow the company to sail through, the government allowed RINL to convert almost Rs 14 billion of debt to preference capital. This arrested the interest outgo and the company made its first profit in 1998. Exhibit 11.16 compares key financial details of all three companies.

The debt-equity ratio of SAIL is 3.34 in 2001, whereas for TISCO it is 1.18. Bringing down debt ratio would result in interest savings. The employee cost for SAIL is Rs 31,348 million, compared to Rs 9,224 million for TISCO. If SAIL brings down employee cost to those of its competitor's levels, it would be able to save Rs 20 billion p.a. If we assume that the savings are perpetual, the present value of savings can be estimated by applying a suitable discount rate. Further, SAIL has a relatively high proportion of short-term debt (25 per cent) which makes

it vulnerable to interest rate swings. To complete the analysis, one might estimate the sales/employee ratio for the competitors and benchmark the best by either bringing down the number of employees or increasing sales or both.

Predicting Distress

Lenders lend money in exchange for interest and principal payments over a specified period of time. Credit risk refers to the chance that the expectation will not be met. One approach to estimating default risk is to compute a composite risk measure based on a firm's financial ratios advocated by Altman (1968). His Z-score model combines select financial ratios, to come up with a score as follows:

$$Z = 0.012 * \text{Net working capital/Total assets}$$
$$+ 0.014 * \text{Retained earnings/Total assets}$$
$$+ 0.033 * \text{EBIT/Total assets}$$
$$+ 0.006 * \text{Market value of equity/Book value of liabilities}$$
$$+ 0.999 * \text{Sales/Total assets}$$

A high Z-score represents a low probability of default and a low Z-score represents a high probability of default. The model's classification accuracy was 95 per cent one year before bankruptcy and 72 per cent two years before. Accuracy of the model decreases as the time period is extended (it may also be unreliable in its predictive ability). Based on the study, it was concluded that firms with Z-scores less than 1.81 are all bankrupt, while those with Z-scores greater than 2.99 fall into the non-bankrupt group. Those falling into the area between 1.81 and 2.99 require more analysis to determine their solvency status. The non-liquid asset ratios like total debt to total assets and cash flow to total debt are, in general, better predictors of bankruptcy than the liquid asset ratios like quick ratio or net working capital to total assets.

Managers may use distress prediction models as a first step to understand the solvency status of their firms. A low Z-score (below 1.81) itself does not suggest that bankruptcy will occur. A firm may avoid bankruptcy by cash infusion and/or waiving off loan covenants by lenders.

EXHIBIT 11.16

Performance comparison (for 1999, 2000, and 2001 in Rs '0 million except ratios)

	SAIL			TISCO			RINL		
	1998–99	1999–00	2000–01	1998–99	1999–00	2000–01	1998–99	1999–00	2000–01
Sales	16002.3	172571	17320.4	6885.1	7015.2	7845.2	2627.5	2714.0	3596.2
Cost of production	11564.7	11821.7	12368.3	4733.1	4179.8	4375.1	2647.3	2595.5	2716.2
Gross fixed assets	30771.5	283079	28129.6	10032.2	10668.3	11258.2	8615.5	8635.3	8649.1
Current ratio	1.07	0.83	0.79	1.05	0.94	0.92	0.11	0.77	0.89
Total interest bearing debt as a % of total assets	61.1%	57.2%	54.9%	50.6%	43.8%	40.2%	26.8%	29.9%	34.4%
Total short-term interest bearing debt as a % of Total interest bearing debt	20.4%	24.2%	25.5%	6.3%	8.4%	8.9%	34.6%	31.4%	28.4%
Net working capital cycle (days)	257	200	162	113	117	95	172	132	136
Avg. days of debtors (days)	46	42	39	74	70	62	15	17	17
Avg. days of creditors (days)	42	36	43	91	100	104	73	77	76

Inventories (closing)	6832	4606	4519	1017	945	922	1009	1111	1207
Raw materials	689	720	650	173	160	179	189	176	192
WIP	0	0	0	25	28	29	398	0	0
Finished goods	4782	2819	2939	564	527	474	0	494	597
Inventory turnover ratio (times)									
Raw materials turnover	6.43	7.21	7.93	7.04	6.62	6.65	5.96	7.7	8.08
Stores turnover	1.41	1.59	1.73	1.44	1.34	1.55	0.66	0.69	0.66
Semi-finished goods turnover				207.59	155.84	151.99	13.29	13.03	
Finished goods turnover	2.56	3.81	4.53	9.95	9	10.18	7.95	11.11	5.32
Debt equity ratio	3.03	3.12	3.34	1.81	1.33	1.18	0.78	0.63	0.78
Quick ratio	0.18	0.19	0.19	0.44	0.38	0.37	-0.52	0.14	0.16
Interest coverage ratio	0.18	0.04	0.56	1.29	1.64	2.11	-0.25	-0.44	0.18
Debtors turnover	7.9	8.77	9.34	4.94	5.22	5.85	24.29	22.02	21.15
Creditors turnover	8.61	10.13	8.57	4.02	3.66	3.5	5.01	4.74	4.78
Employee cost (wages)	2393.9	2772.4	3134.8	1065.4	957.1	922.4	255.2	272.5	407.7
Number of employees	N.A	N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Managing Contingencies

The Altman Z-score model could be used as a warning signal. The next step in the process is to plan for contingencies. Companies resort to one of the following generic strategies to deal with distress:

- Restructure their bank and private debt through negotiations.
- Exchange public debt with securities and cash.
- Get new capital.
- Sell major assets.
- Reduce capital expenditure.
- Tighten controls and reduce costs.
- File for Chapter 11

To test the company's viability, one may prepare pro forma financial statements based on historical balance sheet and income statement relationships. For the company to remain viable, the company's executives must strive to get sales back to where it was during good times, and bring costs down to normal levels. One may use a 'normal' year or a 'good' year to estimate profit margins, sales growth and so on to input into the pro forma statements. The purpose of this analysis is to understand the company's future. The end result of this analysis is a course of action regarding inventory levels, employment, capital expenditure, administrative overheads, marketing expenditure, product mix, pricing, changes in volume of sales and so on. The funds flow/cash flow statements are retrospective in nature. To plan for the future, what one needs is a cash budget, a planning tool. Financial officers typically try to balance cash inflows and outflows. Contingencies affect inflows. To develop a suitable course of action, one has to identify an inventory of resources available to the firm to meet unforeseen shrinkage in inflow and suitable strategies for reducing outflow. A typical pro forma for a specified time period (say, 1–3 years) may look like the one given here:

A. Uncommitted Reserves

Cash US$	XX
Unused lines of credit US$	XX
Additional bank loans US$	XX
Additional long-term debt US$	XX
Issue of new equity US$	XX

B. Reduction of Planned Outflows

Change in production schedule US$ XX

R&D budget US$ XX

Administrative overhead US$ XX

Capital expenditure US$ XX

Dividend payments US$ XX

C. Liquidation of Assets

Sale of unit US$ XX

Shutdown US$ XX

Total US$ XX

The Restructuring Plan

In September 1999, SAIL, which posted the biggest ever loss by any PSU for the first time in 1998–99 during the last 15 years appointed international consultants McKinsey and Company to make recommendations on restructuring. However, when the recommendations were made, the Steel Executive Federation of India (SEFI) refused to acknowledge them. SEFI criticized McKinsey for not having come up with any far-reaching recommendations.[41] SEFI refused to let any of McKinsey's proposals, such as closing down the loss-making alloy steel plant at Durgapur, to be affected. After negotiations, it agreed to revamp the central marketing organization. It also expressed doubts over McKinsey's ability to suggest a turnaround for the company. McKinsey was criticized for failing to predict SAIL's losses accurately. McKinsey had predicted a loss of Rs 12,600 million in November 1998, but the actual figure was Rs 15,730 million; almost Rs 3,000 million off the mark. According to SEFI, at this rate, predictions for a four-year period could go totally wrong. SEFI also alleged that if McKinsey gained all access to the sensitive and classified information, it would be best equipped to advise a prospective buyer of the steel major.[42]

Further, McKinsey had proposed the closing down of SAIL's Alloy Steel Plant (ASP) at Durgapur due to its continued loss-making operations. The SAIL management had been undecided on whether to revive the

[41]'SAIL in Storm'. *Business World*, 27 September 1999.
[42]'SEFI Up in Arms Against Mckinsey & SAIL'. *Vans.com*, 30 August 1999.

ASP or to accept McKinsey's proposal, in view of SEFI's displeasure. Nevertheless, many tenders had been received from the L.N. Mittal's Ispat Group as well as many international steel companies for buying the ASP.[43]

The long-awaited wage agreement finalization was delayed because of the McKinsey controversy. SAIL had agreed to pay its 168,000 employees an interim relief in the form of an ad hoc adjustable advance on a monthly basis, with effect from June 1999. The total outgo was expected to be Rs 1,400 million. However, industrial relations took a turn for the worse when the management announced that it would not pay the advance, given the current financial situation. Inspite of this decision, the Bhilai plant, the only profitable centre, paid its employees the ex-gratia amount. The other plants found themselves in a position wherein they had to make ex-gratia payments, despite being in the red.[44]

By September 1999, there had been no clear signal about the government coming out with any bailout package for SAIL. The proposed restructuring plan had been awaiting approval for 10 months. The company incurred a huge loss of Rs 15.730 billion in 1998–99. The company's chairman announced that the company may have to be referred to the Board for Industrial and Financial Reconstruction if drastic steps are not taken. Following this announcement, CRISIL (Credit Rating & Information Services of India Limited) downgraded SAIL's debt to risky. ICRA (Investment information & Credit Rating Agency of India) downgraded SAIL's debt to LBBB+ (long-term), Ma (medium-term) and A3+ (short-term) to project moderate safety.[45]

After a long wait, the Government of India finally approved the restructuring plan of SAIL. The salient features of the plan included a conversion of a portion of the debt into equity to bring down the D/E ratio from 3:1 to 1.5:1. The Government had offered a restructuring package worth Rs 84.54 billion, consisting of a host of concessions to bring SAIL back into profitability. It also included a waiver of 75 per cent

[43]'SAIL Rejects Mckinsey Suggestion to Close ASP '. *Vans.com*, 4 September 1999.
[44]Its managing director, V. Gujral, was a serious contender for the Chairman's post; he was pipped at the post by the then vice-Chairman Arvind Pande. 'SAIL Not to Make Ex-gratia Payments'. *Vans.com*, 27 August 1999.
[45]'ICRA Decides to Reaffirm SAIL Ratings'. *Vans.com*, 29 September 1999.

of the loan provided by the Steel Development Fund (SDF). The SDF loan stood at Rs 52.8 billion as on 31 March 1999. A 75 per cent waiver would then bring down the debt by Rs 39.6 billion, which could be expected to reduce SAIL's interest burden by Rs 3.8–4 billion p.a. Initially, the Government had intended to convert the SDF loans into equity. However, a high court order filed by some of SAIL's competitors prevented this.[46] It was claimed that the Government was favouring SAIL simply on account of its being the majority stakeholder in SAIL.

Of the various turnaround measures planned by the company, the most significant one was its plan to reduce its workforce from 175,000 to 105,000 in phases through a Voluntary Retirement Scheme (VRS). In 1999, when SAIL offered VRS to its employees, the response was higher than the projection of 8,000 to 10,000. Hence, SAIL revised the target to 15,000 employees.[47] With a huge workforce of around 170,000, SAIL found itself in a disadvantageous position. The manpower costs constituted about 15 per cent of turnover. Reducing workforce to around 100,000 could have eased the burden on the company.

Also under the plan, SAIL would then reduce its stake in non-core businesses and concentrate on core areas of operations. Global tenders had already been invited for the Oxygen plant in Bhilai, which would be set up as a joint venture company. SAIL also intended divesting three units of the Rourkela plant, namely, Captive Power, Fertilizer plants and Central Power Training Institute. The three captive power units were expected to fetch Rs 9 billion; Indian Iron & Steel Company, a subsidiary, was expected to be sold for Rs 5 billion; and the steel unit at Salem was expected to fetch another Rs 5 billion. Besides, Mannesman Demag of Germany and Evesta Sheffield of England had shown interest in purchasing the Salem steel unit. Furthermore, the Government had guaranteed additional market borrowings of Rs 25 billion, out of which Rs 15 billion would be used for VRS.

Whether or not SAIL will emerge a viable company depends on political will, maturity of the labour union and the speed with which the

[46] 'HC Restraint Govt., JPC from Converting SAIL Loan to Equity'. *Vans.com*, 28 August 1999.
[47] 'SAIL Revises Target for VRS'. *Vans.com*, 27 August 1999.

company implements the restructuring package. Often, restructuring involves substantial infusion of capital. A challenge for most companies in distress is to raise capital at an acceptable cost. SAIL has the challenge of raising Rs 8 billion by 2004 to implement the restructuring package. A large part of the fund requirement is expected to be raised from asset sales. If other public sector steel companies in distress are any indication, there is a cause for concern. Rashtriya Ispat Nigam Ltd (RINL), another loss-making public sector steel company, had appointed AT Kearney to advise. RINL has been suffering losses for several years despite the assistance of an international consultant.

In 1991, General Dynamics was in a similar situation as SAIL–an industry plagued by excess capacity.[48] When other defence contractors diversified into non-defence areas, GD adopted an objective of creating shareholder value by downsizing, restructuring and partial liquidation. To achieve this, the company installed a new management team and introduced an incentive compensation plan that tied executive pay to stock price performance. As part of the turnaround strategy, William Anders, the CEO and Chairman of the company, implemented:

- A gain-sharing bonus plan for the top 25 executives.
- An accelerated stock option and restricted stock grants to 150 upper level managers and executives.
- An option exchange programme for 1,150 managers, in which managers would get new options (in place of old ones) at a lower price.

Between 1991 and 1993, General Dynamics sold the Data System unit to Computer Sciences Corp., the Cessna Aircraft subsidiary to Textron, its missile business to GM's Hughes Electronics subsidiary, its electronics division to Carlyle Group, and Space Systems to Martin Marietta. During the same period, the company reduced its workforce from 98,150 to 26,800. The company's stock price rose from US$ 55 to over US$ 92 between 1992 and 1993, and shareholders gained a return of 426 per cent.

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[48] Dial, J. and K. Murphy. 1994. 'Incentives, Downsizing and Value Creation at General Dynamics', *Journal of Financial Economics*, 37(3).

Concluding Comments

It is usually believed that the pressure to restructure arises from competitive forces and that the process is largely involuntary. As pointed out by Gordon Donaldson in his study of General Mills, restructuring could be voluntary as well, although the process may take several years or even decades to consummate. Indeed, a voluntary restructuring is more effective than involuntary restructuring arising out of hostile takeovers in which the value of the company may get destroyed due to the target company's defense tactics. Restructuring is a lengthy process. A company, on an average, takes one year to complete restructuring. The initial announcement may be followed by a variety of other actions (like declaring bankruptcy or sell-offs). So, the share price reaction to initial announcement does not capture the full wealth effects of the restructuring.[49]

A summary of the different types of restructuring is given below.

	Spin-off	*Carve-out*	*Tracking stock*
Change of ownership	Yes	No	Usually No
Raise capital	No	Yes	Usually No
Stock market reaction	+ve	+ve	+ve
Preserve synergy	No	Yes	Yes
Cure undervaluation	Yes	Yes	Yes
Attract new investors	Yes	Yes	Yes/No
Improved analyst coverage	Yes	Yes	Yes

[49]See Boone, A.L. and H. Mulherin. 2001.'Valuing the Process of Corporate Restructuring'. Working Paper, Smeal College of Business, Pennsylvania State University, May.

Appendix 1: Valuation of Brands

Brands are valued by a variety of methods. Under the cost-based method, the value of a brand is the money spent on creating it. The replacement cost method suggests that the value of a brand is the amount necessary to create a brand with similar turnover, profitability, distribution, reach and so on. The Interbrand approach is the most popular methodology for estimating the value of brands.[50]

A brand's value is the product of:

- Average annual after-tax profits of the brand adjusted for earnings of an equivalent unbranded product and
- A multiple reflecting the brand's strength.

Interbrand takes seven factors into account to arrive at a 'brand strength multiple'. They are:

> *Leadership*: A brand which has the ability to influence the market in setting price points and commanding distribution gets a higher score (Max: 25).
> *Stability*: Those brands which enjoy a strong consumer franchise are considered stable and awarded a higher score (Max: 15).
> *Market*: Brands in markets such as foods and soft drinks are less vulnerable to shifts in fashion and technology (Max: 15).
> *Geographic spread*: Brands which have an international appeal are stronger than regional brands (Max: 25).
> *Trend*: The long-term appeal to consumers (Max: 10).
> *Support*: Consistency in investment and strength of communication (Max: 10).
> *Protection*: Legal protection available to the brand owner.

To assess the brand strength, Interbrand conducts a detailed audit of trade and retail outlets among other things. The final multiple assigned to the brand depends on the brand strength score. To illustrate, if the brand score is 56, Interbrand may apply a multiple of 8.42.

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[50]Michael, B. 1994. 'Assessing Brand Value', in S. Paul, (ed.), *Brand Power*, New York: New York University Press.

Brand valuation involves the following steps:

- Collect most recent profit data (3 years).
- Re-state the prior period (year-2, year-1) profits to present day values by inflating at a suitable rate.
- Attach a weighting factor to the re-stated profit figures. Usually, a simple weighting of three times the current year, twice the previous year and once before is used. These aggregate earnings are divided by the sum of the weighting factors $(3+2+1 = 6)$.
- Deduct operating income of an equivalent unbranded product.
- Deduct taxes at the medium-term effective tax rate.
- Apply a suitable multiple, depending on the brand strength.

Appendix 2: Features of Targeted Stocks

Company	Voting rights	Liquidation rights in proportion to businesses?	Dividend policy tied to tracked businesses?	Managerial compensation tied to tracked businesses?
GM (EDS)[51]	Fixed	Voting rights	Yes	Yes
GM (Hughes)	Fixed	Voting rights	Yes	Yes
USX Corp. 1	Variable	Relative value	Yes	Yes
USX Corp. 2	Variable	–do–	Yes	Yes
Ralston Purina	–do–	–do–	Yes	Yes
Kmart	–do–	–do–	–do–	–do–
Genzyme 1	–do–	Relative shares[52]	–do–	–do–
Genzyme 2	NA	NA	NA	NA

Source: Billett and Mauer (1998).

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[51]The E class and H class shares are called letter stocks . The subtle difference between letter stocks and targeted stocks lies in the rights of shareholders.

[52]Based on fixed number of liquidation units per share.

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12
Bankruptcy and Reorganization

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CHAPTER OBJECTIVES

- Highlights the causes of financial distress
- Surveys the bankruptcy code in the US, the UK and such others.
- Suggests a methodology for valuation of bankrupt firms
- Summarizes the results of academic studies on various aspects of bankruptcy

When a firm's condition deteriorates to the extent where it cannot meet its financial obligations, the firm is said to be in financial distress. Usually, the first signals of distress are violation of debt covenants and suspension of dividends. Bankruptcy includes financial reorganization and liquidation. Financial reorganization involves rearranging a firm's cash flow (for example, converting debt into equity), whereas liquidation ends the firm's operations. It involves selling off tangible assets and paying off claimants to the extent possible. Recent examples of distressed firms are L A Gear, Enron, Iridium, Chrysler, Massey Ferguson and Marvel Entertainment. Some of these companies, once considered the darling of the investment community, have left million of investors with worthless paper. Why

do some apparently well-run companies get into financial distress? The causes of distress can be inferred from the *ex-ante* characteristics of the companies that became distressed. We attack the issue of distress by using *ex-ante* and *ex-post* information on the characteristics of some high profile distressed firms and try to make some generalizations.

Causes of Distress

Although companies may go bankrupt due to numerous reasons, there are some generic reasons like failure of control systems, loss aversion and overconfidence, changes in the macroeconomic environment and high levels of debt.

Managerial Myopia

Modern finance theory suggests that the objective of a corporation is to maximize shareholder value. Due to agency conflicts, managers may enrich themselves at the expense of shareholders. One way to control such conflicts is to award stock-based compensation plans, because the equity ownership induces managers to think and act like shareholders. This is based on the premise that other costs like behavioural costs can also be addressed through incentive compatibility. When managers are overconfident of their strategy or when they have biased estimates of payoffs from a project or when they have a distorted view of what is in their own interest, incentives alone will not help.[1] Behavioural finance theorists argue that some financial phenomena can be understood using models in which some agents are not fully rational. The field draws from psychology, which catalogues the deviations from rationality. Either managers or investors could be irrational. For instance, Sony Corporation spent substantial time and money on the development of colour television receiver in the 1960s at the behest of Ibuka, one of Sony's founders.[2] Although the company had not achieved a commercially viable manufacturing process, Ibuka insisted on selling the product at a

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[1]Hersh, S. 2001. 'Behavioral Corporate Finance', *Journal of Applied Corporate Finance*, Fall, 14(3).

——. 1999. *Beyond Fear and Greed: Understanding Behavioral Finance and the Psychology of Investing*, Harvard Business School Press.

[2]Akio Morita, the other founder, was apparently, not in favour of the project.

negative profit margin. It was only when the managers announced that Sony was close to ruin that Ibuka abandoned the project. In this case, for example, there was no agency conflict in the sense that Ibuka was a major shareholder himself. Yet, he would not abandon a loss-making project until it almost ruined the company because of loss aversion. In other words, overconfidence and loss aversion can lead to distress even in the presence of high-powered incentives. The case of Sony can be interpreted as irrationality on the part of managers themselves rather than that of investors. Sony's managers were under the impression that they were maximizing firm value when in reality they were not.

Failure of Internal Control Systems

Changes in ownership through mergers and acquisitions generally lead to an increase in shareholder value. Many academic studies in America report increases in shareholder returns of target companies. Mergers and Acquisitions enable transfer of assets to owners who value them most. In well-planned acquisitions, the gain is primarily due to better governance and improved efficiency. In a market-oriented economy like the US, companies making value-destroying investments are disciplined by capital markets. The takeover wave of the 1980s in the US was largely due to de-conglomeration, that is, companies sold off unrelated businesses and acquired related businesses. In many countries, the market for corporate control is either weak or non-existent. In some Asian and European countries, the market is restricted because of complex cross-holdings, pyramid structures and anti-takeover laws. In the absence of an effective market for corporate control, companies are not subject to the discipline of the stock market.

Even when the market for corporate control is active, companies may still escape any disciplinary mechanism. By nature, organizations resist control systems and ineffective governance is a major part of the problem with many distressed firms. General Motors, for example, one of the world's high-cost producers in a market with substantial excess capacity, avoided making major changes in its strategy for over a decade.[3] Yet, the board acted to remove the CEO, Robert Stempel, only in 1992,

[3] Jensen M.C. 1993. 'The Modern Industrial Revolution, Exit and the Failure of Internal Control Systems', *Journal of Finance*, July.

after the company had reported losses of US$ 6.5 billion in 1990 and 1991 and an opportunity loss of over US$ 100 billion in its R&D and capital expenditure programme from 1980 to 1990. GM is not the only example. IBM, Eastman Kodak, Iridium have all changed strategies or their CEOs or filed for bankruptcy (as the case may be), only after experiencing severe losses.

Derivatives are financial instruments whose values depend on one or more underlying variables like the price of stock or commodity. Derivatives are traded in both organized and over-the-counter markets. The OTC market is several times bigger than the organized market. Enron started off as an energy company in 1985. As part of its corporate strategy, it decided to differentiate itself from its competitors by offering derivative solutions to its customers. Because gas prices are highly volatile, Enron's customers attach value to stability of prices. Enron would supply gas under long-term contracts at constant prices and hedge the risk of price fluctuations in the derivatives market. Slowly, its exposure to and revenues from derivatives trading grew. The OTC derivative market is largely unregulated and so was Enron's trading. The question of why Enron failed relates to derivative deals between Enron and its off-balance sheet subsidiaries.[4] Enron used derivatives to hide losses on its speculative investments in technology firms, debt incurred by unprofitable businesses and to inflate the value of unprofitable businesses.

Capital Structure

According to modern finance theory, companies with lots of investment opportunities can be expected to issue short term debt to preserve financial flexibility and to protect lenders against greater uncertainty in the company's future.[5] Further, growth firms ought to use relatively less debt to prevent the under-investment problem. Conversely, for mature companies whose value comes mostly from assets-in-place, the costs of bankruptcy are likely to be low. Such firms can afford to have high leverage ratios to prevent wastage of free cash flow by managers.

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[4]The June–July 2002 issue of Financial Engineering News carries two excellent articles on Enron. They are available at www.fenews.com.
[5]The cost of long-term debt will be unacceptably high for growth firms because of uncertainty in their future.

Conventional wisdom suggests that companies should avoid combining high operating leverage (which leads to high business risk) and high financial leverage (which leads to high financial risk). Earnings are boosted in good times because of the presence of fixed costs and debt; but (earnings) get depressed in bad times for the same reason, namely, the presence of interest payments on debt and other fixed costs. Massey Ferguson, a multinational producer of farm machinery, industrial machinery and diesel engines sought to increase its market share by turning to the Third world for growth. Massey manufactured its products in the UK and Canada and sold the output to LDCs (less developed countries) in the late 1970s. This strategy worked quite well in the initial years. Massey had an aggressive debt policy *and* an aggressive product market strategy when compared with competitors. It was unwise to couple a risky strategy in a cyclical industry with high (short-term) debt.[6] When short-term interest rates shot up and the demand dried up for its products for various reasons, Massey was thrown into distress. John Deere, its major competitor, however, had moderate debt ratio because of which it had the financial flexibility to make capital investments. When Massey and another competitor International Harvester were busy resolving distress, Deere pursued aggressive tactics to lock up market share.

In the 1980s, a large number of American firms undertook leveraged recapitalizations and leveraged buyouts to improve firm value and operating efficiency. Many firms that undertook management buyouts in the late 1980s encountered distress due to poor structure of the deals (in terms of price) and adverse regulatory and economic developments. Academic studies in the US find that the firms encountering distress were more highly leveraged than other firms and exhibit poor post-recap operating performance due to industry wide problems.[7]

Currency and Interest Rate Shocks

The steel companies in Asia were highly leveraged and depended on high tonnages to survive before they went bust. When the Asian economies

[6]Customers in less developed countries are more risky compared to customers in developed countries.

[7]Denis, D.J. and D.K. Denis. 1995. 'Causes of Financial Distress Following Leveraged Recapitalizations', *Journal of Financial Economics*, 37.

shrank, these companies were badly affected. This trend is not specific to the steel sector. A survey of the five countries most affected by the East Asian financial crisis–Indonesia, the Republic of Korea, Malaysia, the Philippines and Thailand–found that 63 per cent of firms are illiquid (with earnings less than debt service) and 31 per cent technically insolvent (with financial obligations exceeding their equity).[8] For the entire period 1988–96, the average debt ratios in Korea and Thailand were much higher than that in Germany and the United States. East Asian firms had not only too much debt but also the wrong type of debt, that is, short-term. The average share of short-term debt in total debt was about 66 per cent in Malaysia and Thailand in contrast with 25 per cent in the US and 45 per cent in Germany. Although the share of short-term debt increased gradually, it was one of the causes of distress. In addition, Korean and Malaysian firms had substantial share of foreign currency short-term debt. When the domestic currency is devalued, the value of foreign currency debt (denominated in US dollars, say) increases. Sovereign governments may increase interest rates to stabilize their currencies. But this has a negative impact on corporate profitability. This is at least one of the reasons for the poor performance by East Asian firms.

How Costly is Bankruptcy?

The costs of bankruptcy are of two kinds, direct and indirect. Direct costs include lawyers' and accountants' fees, other professional fees and the value of managerial time spent on administering bankruptcy. Indirect costs include lost sales (and hence lost profits), the possibility that the firm may not be able to obtain additional credit or to issue securities except under strict terms. A firm may lose sales rapidly if the firm is a manufacturer of long-lived products that require continuous servicing or replacement parts, as customers may use their *perception* of the financial condition of the company to make their purchase decisions. For instance, the value of a computer is not only determined by its hardware, but also by the manufacturer's continued provision of hardware and software support. An obsolete software or hardware is worthless. Hence, a customer may settle for an inferior alternative with a lower probability

[8]Claessens, S., S. Djankov and G. Ferri. 1999. 'Corporate Distress in East Asia: The Effect of Currency and Interest Rate Shocks', *Private Sector*, January.

of bankruptcy based on the perception that this firm is risky. Software firms may refuse to support computer firms that have high probability of bankruptcy because these companies are unlikely to be around for long, thereby accelerating distress. Likewise, airlines depend on frequent-flier plans to attract business travellers. No amount of advertising may bring credibility to the claim made by those companies. Similarly, retailing companies may not obtain goods or credit from wholesalers. Since these firms do not get credit, their competitiveness will be lost. The indirect cost of bankruptcy can arise from the bankruptcy process itself. The bankruptcy trustee, as an agent of the court, may not run the firm in a value-maximizing way as he has no incentive to do so. The firm incurs an opportunity loss due to the sub-optimal decision-making of the agent. Another possible indirect cost of bankruptcy is the higher compensation that the managers of a highly-levered firm will receive because of the higher probability of unemployment they may face. Because the indirect costs are mainly lost opportunities, it is difficult to measure them.

Based on the foregoing discussion, we would expect firms with large intangible assets to keep their leverage low to reduce the probability of future bankruptcy. Thus, Microsoft, which derives much of its value from growth opportunities, should keep the debt level low.

From the perspective of a firm choosing a capital structure, it is the expected cost of bankruptcy at the time of decision-making that matters.

Expected cost of bankruptcy = Probability of bankruptcy * bankruptcy cost in rupees. To illustrate, if the probability is 0.3 and the bankruptcy cost is 20 per cent of current market value of the company (which is US$ 100 million, say),

$$E \text{ (bankruptcy)} = 0.3 * 0.2 * 100$$
$$= US\$ 3 \text{ million.}$$

As pointed out earlier, bankruptcy cost includes direct, deadweight costs such as administrative and legal expenses and indirect costs such as lost sales, lost investment opportunities, interest paid on emergency loan (if any), higher salary for the chief executive (due to increased riskiness of leverage) and so on. There is no surefire formula to estimate bankruptcy cost. The proportion of companies that have gone bankrupt in the company's rating class can be taken as proxy for probability. Generally, expected bankruptcy cost is taken as 20–30 per cent of firm value.

A practical way of adjusting for risk of disruption, impact on capital rationing, impact on morale, efficiency and effectiveness of spending programmes would be to:

- Take the cost of bank credit agreement as proxy for cost of disruption.
- Take the NPV of projects cancelled as proxy for capital rationing.
- Assume a subjective sum for lost efficiency, say, US$ 5 million a year.
- Subjectively set a value for loss in sales.

A recent study in the US examined the industry-adjusted change in sales, operating income and market value of highly-levered firms in industries experiencing downturn.[9] Industry downturns were defined as drops in sales and market values of 30 per cent or greater. The study found that highly-levered firms lost an additional 14 per cent, 12 per cent and 7 per cent of sales, operating income and market value relative to the average firm in the industry, and 26 per cent, 27 per cent and 15 per cent more than the least levered firm in the industry after controlling for industry performance. This study provides a pointer to the magnitude of distress costs.

The US Bankruptcy Code

Bankruptcy is the legal process of settling claims between debtors and creditors. There are two types of bankruptcy procedures in the US: Chapter 7 and Chapter 11 and the law is enforced through bankruptcy courts, which are divisions of District courts. The bankruptcy judges are appointed to preside over bankruptcy cases. Chapter 7 provides for liquidation of the company. Either the debtor (the company) or the creditor may initiate the bankruptcy process. Once the bankruptcy petition is filed, an automatic stay comes into effect that prevents pre-petition creditors from collecting debt and remains in effect till the end of the bankruptcy case. Soon after the petition is filed, the bankruptcy judge appoints a trustee (an attorney or accountant or a business person) to oversee the bankruptcy process. The creditors then hold a meeting to assess the problem, determine the types of debt and the location

[9]Opler, T. and S. Titman. 1994. 'Financial Distress and Corporate Performance', *Journal of Finance*, July. Another study of high leverage transactions suggests that the costs of financial distress are 10 per cent of firm value. See Andrade and Kaplan (1998). Also see Kaplan's study of Federated. Kaplan (1994).

(and perhaps quality) of debtor's assets. The trustee may seek outside expertise (legal/tax/accounting) to work on the case. The trustee then gathers debtors' assets and liquidates them by auction or private sale. The proceeds of the liquidation are disbursed on the basis of priority: secured claims, administrative claims, employee compensation, customer claims, tax, general unsecured claim and equity claims, in that order.

Chapter 11, in contrast, allows a firm to remain in operation while a plan of reorganization is being worked out. Unlike Chapter 7, the company's management remains in charge (called debtor-in-possession). Although the company's management remains in charge, they are required to seek approval from the court as far as certain actions like asset sales or new credit are concerned. During the 120 days after filing for Chapter 11, the debtor is given the exclusive right to formulate a plan of reorganization and during the same period the debtor may invite creditors for a meeting to negotiate a plan. The plan is put into action when a certain fraction of shareholders and creditors (two-thirds the dollar amount of claims and a majority of the class) vote in favour of the plan. The court accepts the plan only if all classes vote in favour or if the plan is considered fair and equitable to those who did not vote in its favour.

US Chapter 11 provisions provide the most protection for bankrupt firms' assets and result in a greater likelihood of successful reorganization, than is found in other countries where liquidation and sale of the assets for the benefit of creditors is more likely the result. But, the US Code's process is usually lengthy (averaging close to two years, except in case of a 'pre-packaged' Chapter 11) and expensive; furthermore, the reorganized firm often ends up re-filing under Chapter 11 (Altman, 1998). A Chapter 11 Case may also get converted into Chapter 7. Pan American World Airways and Eastern Airlines had initially filed for Chapter 11. However, significant operating losses during bankruptcy and inability to attract new funding forced the companies to liquidate.[10]

International Comparisons

Some argue that the US bankruptcy code is biased towards the debtor in the sense that it allows managers to run the firm when negotiations are under way and gives them the exclusive right to propose a reorganization plan.

[10]Fenster (1993).

Seeking protection from creditors itself does not suggest that the law is pro-debtor because preserving the going concern value will benefit other claimants. Another important question that some pose is whether bankruptcy code is needed in the first place because the code limits the contracts that can be written between creditors and debtors, and redrawing of contracts itself does not require a bankruptcy law. A problem arises when there are multiple claimants. The contract itself may not specify the pecking order of claimants (that is, the order in which claims will be settled) in the event of bankruptcy; and a claimant may withhold an agreement that is collectively in the interest of all parties concerned in an effort to garner disproportionate benefits. Bankruptcy law eliminates such problems.

Many countries in the world do not have a bankruptcy law in place. Authorities in such countries would be interested in selecting an efficient code. A bankruptcy code would be considered efficient if:

- It preserves promising companies while liquidating uneconomic ones.
- It allows reorganization or liquidation at minimal cost.
- It facilitates information production to all concerned parties.[11]
- It should facilitate the discovery of the best option for the firm, including preserving the value of assets.
- It should preserve the absolute priority of claims, that is, senior creditors should be paid before junior creditors are paid.

Shareholders provide equity in exchange for dividend and voting rights. Likewise, creditors lend money in exchange for interest and principal payments and the right to possess collateral when the company defaults on its payments. The differences in governance in different parts of the world are partly due to the differences in the rights of shareholders and creditors.[12]

There are two broad law systems—civil law and common law. According to Duhaime's Law Dictionary, the main features of common and civil law are as follows:[13]

[11]Perfect information production typically leads to efficient solutions. Otherwise, one creditor may, for instance, use privately available information to his advantage.
[12]La Porta et al. (1997, 1998), Shleifer and Vishny (1997).
[13]http://lawinfo.com/lawdictionary/

Law inspired by old Roman Law, the primary feature of which was that laws were written into a collection; codified, and not determined, as is common law, by judges. The principle of civil law is to provide all citizens with an accessible and written collection of the laws which apply to them and which the judges must follow.

Judge-made law is law that exists and applies to a group on the basis of historical legal precedents developed over hundreds of years. Because it is by judges rather than politicians, it is also referred to as 'unwritten' law. Judges seek these principles out when trying a case and apply the precedents to the facts to come up with a judgement.

Common law is often contrasted with civil law systems that require all laws to be written in a code or written collection. Common law has been referred to as the 'common sense of the community, crystallized and formulated by our ancestors'. Equity law was developed after the common laws to offset the rigid interpretations medieval English judges were giving the common law. For hundreds of years, there were separate courts in England and its dependents: one for common law and one for equity; and the decisions of the latter, where they conflicted, prevailed. It is a matter of legal debate whether or not common law and equity are now 'fused'. It is certainly common to speak of the 'common law' to refer to the entire body of English law, including common law and equity.

According to La Porta et al. (1998, 2000), there are a few major legal families–among them, the English (common law), which is to be found in England and its former colonies, including the US, Canada, Australia and New Zealand; the French, which is found in France and her former colonies, as well as in the former Dutch, Belgian and Spanish colonies, including Latin America; the German, which is found in Germany and the Germanic countries of Europe; and the Scandinavian.

A shareholder, as a residual claimant, has the right to attend annual general meetings and vote on various corporate matters such as asset sales, mergers and acquisitions, election of directors, and so on. Often widely dispersed shareholders do not actively take part in the governance process. In those countries where voting by mail is not allowed, the company's management can get away uncontested. In some countries like Italy and Belgium whose legal systems are based on the French Civil law, shareholders are not allowed to vote by mail. In general, countries following the common law tradition (the US, the UK, Australia,

Canada, and the like) provide the best investor protection. Likewise, the creditor rights vary from country to country. Some countries allow possession of collateral, whereas some do not. Again, the common law tradition provides the best protection to creditors while the French Civil Law countries provide the weakest protection.

German civil law and Scandinavian countries fall in between. Creditors of defaulting firms can resort to one of the two strategies– liquidate or reorganize. Since liquidation of a firm has undesirable social consequences, reorganization is usually preferred. La Porta et al. (1998) have documented the status of creditor rights around the world. The same for select countries is shown in Exhibit 12.1.

| | | | EXHIBIT 12.1 | | |
			Creditor rights around the world		
Country	No automatic stay on assets	Secured creditors first paid	Restrictions for going into reorganization Creditor rights (1 = creditor protection is the law)	Management does not stay in reorganization	Creditor rights
Australia	0	1	0	0	1
Canada	0	1	0	0	1
India	1	1	1	1	4
UK	1	1	1	1	4
US	0	1	0	0	1
Argentina	0	1	0	0	1
Brazil	0	0	1	0	1
Chile	0	1	1	0	2
Indonesia	1	1	1	1	4
Austria	1	1	1	0	3
Germany	1	1	1	0	3
Japan	0	1	0	1	2
Switzerland	0	1	0	0	1
Denmark	1	1	1	0	3
Finland	0	1	0	0	1
Norway	0	1	1	0	2

Source: La Porta et al. (1998).

Further, in many countries, companies can issue shares with different voting rights. The one-share, one-vote rule is followed in the US, the UK and many other countries. But it is common in countries like Brazil and

Chile to issue shares with different voting rights. Some companies restrict the voting rights of foreign investors. For example, some companies from Latin America and Europe have issued (depository) shares with differential voting rights.[14] The shareholders of B class shares of Saga Petroleum, a Norwegian company, have no voting rights, but holders of A shares have full voting rights. Mexican companies have issued L shares that provide limited rights to elect the number of directors and such other matters. Two Swedish firms—Astra and Scania—have issued two classes of shares—A and B. The A class shares have one vote each and the B class shares carry 1/10 vote each.

ABB has 24,345,619 shares with 0.1 vote per share and a par value of 5 SEK, as well as 66,819,757 shares with one vote per share and a par value of 5 SEK. Investors, in general, are better protected in countries where the one-share, one-vote rule is enforced. In the absence of such a law, the insiders of the company can have disproportionate control on the company in relation to their investment.

Bankruptcy Code in the United Kingdom (UK)

There are three possible routes to reorganization in the UK:

- Liquidation
- Receivership
- Voluntary arrangements

The Insolvency Act of 1986 is different from the Chapter 11 procedures in several ways:

- Creditors run the show, by and large.[15]
- Tax claims are first, in many cases (argued that this reduces the incentive for creditors to agree to reorganization plans).
- Floating charge agreements that allows banks to act as bankruptcy administrators (unique to the UK).

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[14]Pinegar, M. and R. Ravichandran. 2001. 'The Idiosyncratic Nature of Sibling ADRs Issued by Mexican Firms: A Clinical Study'. Unpublished Working Paper, Northern Arizona University, May.
[15]Hill (1994).

- Liquidation is encouraged, as opposed to reorganization.
- Preserving employment is not a policy objective. (But this might be changing).
- More attention is paid to directors' actions before the bankruptcy to see whether they made sound business judgement.

Liquidation involves the sale of company's assets to repay creditors. Receivership involves appointment of a receiver by a creditor who has a specific lien on the firm's assets and is not subordinate to other creditors. He has full powers to run the firm on behalf of the creditor. This would not be permitted under Chapter 11 because of automatic stay. Voluntary arrangement involves formal arrangement between the company and its creditors with a minimum of court involvement, similar to Chapter 11.

A comparison of insolvency codes in select countries is given in Appendix.

Predicting Distress

Lenders lend money in exchange for interest and principal payments over a specified period of time. Credit risk refers to the chance that the expectation will not be met. One approach to estimating default risk is to compute a composite risk measure based on a firm's financial ratios advocated by Altman (1968, 2000). His model is based on Multiple Discriminant Analysis. MDA is a statistical technique used to classify an observation into one of several *a priori* groupings dependent upon the observation's individual characteristics. It is used to classify and make predictions in problems where the dependent variable appears in qualitative form (for example, bankrupt or non-bankrupt). After groups are established, data are gathered for the objects in the group. MDA attempts to derive a linear combination of these characteristics which best discriminates between the groups. The final discriminant function is given as follows:

$$Z = 0.012 * \text{Net working capital/Total assets}$$
$$+ 0.014 * \text{Retained earnings/Total assets}$$
$$+ 0.033 * \text{EBIT/Total assets}$$
$$+ 0.006 * \text{Market value of equity/Book value of liabilities}$$
$$+ 0.999 * \text{Sales/Total assets}$$

The Z-score model is dependent on five variables. The working capital to total assets ratio is a measure of net liquid assets of the firm relative to the total capitalization. A firm experiencing consistent losses will have shrinking current assets. The retained earnings to total assets ratio measures the leverage of the firm. Those firms with high retained earnings relative to total assets have financed their operations with retained earnings rather than debt. The third ratio–EBIT/Total assets is a measure of productivity of the firm's assets. The fourth ratio–M.V. of equity/Total liabilities measures how much the firm's assets can decline in value before the liabilities exceed the assets and the firm becomes insolvent. The fifth ratio–Sales/Total assets measures the sales generating ability of the firm's assets.

A high Z-score represents a low probability of default and a low Z-score represents a high probability of default. The model's classification accuracy was 95 per cent one year before bankruptcy and 72 per cent two years before. Accuracy of the model decreases as the time period is extended (it may also be unreliable in its predictive ability). Based on the study, it was concluded that firms with a Z-scores less than 1.81 are all bankrupt, while those with Z-scores greater than 2.99 fall into the non-bankrupt group. Those falling into the area between 1.81 and 2.99 require more analysis to determine their solvency status. The non-liquid asset ratios like total debt to total assets and cash flow to total debt are, in general, better predictors of bankruptcy than the liquid assets ratios like quick ratio or net working capital to total assets.

Managers may use distress prediction models as a first step to understand the solvency status of their firms. A low Z-score (below 1.81) itself does not suggest that bankruptcy will occur. A firm may avoid bankruptcy by cash infusion and/or waiving off loan covenants by lenders.

Acquisition of Distressed Firms

Because of agency conflicts associated with operating a firm in distress, some suggest that the bankruptcy law should encourage a sale of the company through auction. Distressed firms are often acquired under competitive bidding. Acquirers are typically competing firms and targets are purchased at a discount to prices paid for non-bankrupt firms.

A sell-off of assets can take place either through Section 363 of the US Bankruptcy code or as part of a plan of reorganization (Hotchkiss

and Mooradian 1998, McBride 1996). Under a 363 sale, the company must first obtain an offer and then notify the court. The court in turn informs the shareholders and creditors. Creditors may engage advisers to seek other buyers. The judge at a court hearing must approve any sale. A sale can also take place through a plan of reorganization. Creditors and shareholders are asked to vote on the plan and indicate their bid preference.

The company's management would be interested in evaluating competing bids in order to choose the best bid. A bid could be considered fair if the proposed investment by each bidder equals or exceeds the expected market value of the new securities each is to receive under the proposed plan of reorganization. Typically, bidders may receive a combination of new debt, equity, preferred stock and warrants in exchange for their investment. One may estimate the value of equity stake after the reorganization and compare it with the proposed purchase price. The difference between the two implies the value of the remaining securities being offered.[16]

Valuation of Bankrupt Firms

In free cash flow valuation, the weighted average cost of capital is used to discount cash flows. An algebraically equivalent, yet superior, method is the capital cash flow calculation.[17] Free cash flow valuation excludes interest tax shields because the discount rate, WACC, incorporates the tax advantage of debt. In capital cash flow valuation, free cash flows plus interest tax shields are discounted at *Pre-tax* WACC (expected asset return). Since the asset return does not change when capital structure changes, it is easier to implement capital cash flow valuation.

Capital cash flow = Net income + Depreciation – Capital expenditure –Δ Working capital + Cash interest
or
= EBIT (1–T) + Depreciation – Capital expenditure – Δ Working capital + Interest tax shields

[16]It is often difficult to estimate the value of other securities like warrants and new debt.

[17]Ruback R. S. 2000. 'Capital Cash Flows: A Simple Approach to Valuing Risky Cash Flows'. Working Paper, Harvard Business School, March.

It is easier to implement the former approach because it incorporates corporate estimates of taxes that reflect the special circumstances facing the firm rather than mechanically finding the product of tax rate and taxable income.[18]

The appropriate discount rate is a before-tax rate because the tax benefits of debt are already included in the capital cash flows. The correct discount rate is the pre-tax WACC.

Pre-tax WACC = Weighted average costs of debt and equity = $(D/V) \, K_D + (E/V) \, K_E$

D/V and E/V are debt-to-value and equity-to-value ratio, respectively; K_D and K_E are costs of debt and equity.

Cost of debt $= K_D = R_f + \beta_D$ (risk premium)
Cost of equity $= K_E = R_f + \beta_E$ (risk premium)

$$\text{Pre-tax WACC} = \frac{D}{V} \, (R_f + \beta_D * R_P) + \frac{E}{V} \, (R_f + \beta_E * R_P)$$

$$= R_f + (D/V \, \beta_D + E/V \, \beta_E) \, R_P$$
$$= R_f + \beta_A \, (R_P)$$

Since $\beta_A \, V = \beta_D \, D + \beta_E \, E$
or $\beta_A = \beta_D \, D/V + \beta_E \, E/V$

Note that the discount rate depends on R_f, β_A and risk premium, and does not incorporate D/V or E/V, that is, the pre-tax WACC is independent of capital structure and hence can be applied to all cash flows regardless of the capital structure in existence. In other words, pre-tax WACC, which is a function of asset beta, is constant. Both free cash flow valuation and capital cash flow valuation provide the same answer. CCF valuation, however, is easier to implement.

The capital cash flow valuation methodology is especially appropriate when the company being restructured has high leverage and complicated tax status resulting from net operating losses, which is usually true of bankrupt firms. In a restructuring situation, all concerned parties would be interested in estimating the value of their claim after the transaction. Typically creditors get equity in exchange for debt; promoters (majority shareholders) invest equity to keep the company alive. So they would be

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[18]In other words, in many instances, it does not reflect the actual tax paid.

interested in estimating the value of equity after the transaction. To get an estimate, one should forecast capital cash flow and discount it using pre-tax WACC. The terminal value is calculated assuming that capital cash flows grow at a constant rate in perpetuity, starting with the last year of the projections. Many bankrupt firms will have unused net operating loss carry forwards at the end of the projection period. These NOLs are not forecasted to continue in perpetuity (Gilson et al. 2000). Therefore, the terminal value is estimated in two parts. The first part extends the financial projections and simulates a firm's use of NOLs until the NOLs are used up or expire. During this extended projection period, capital cash flows are calculated as:

([EBIT – interest) * tax rate] + cash flow adjustments + tax shield due to NOLs = capital cash flows

In the second part of the terminal value calculation, the value of firm is estimated as a growing perpetuity of capital cash flow in the year following the extended forecast period. This cash flow does not include any NOL benefits. The present value of this portion of the terminal value is added to the present value of the capital cash flows during the extended forecast period, to estimate the total terminal value.

The result of this exercise is the value of the *firm*. Subtracting the value of post-transaction debt yields the value of equity.[19]

The Role of Vulture Investors

Any large corporation is dependent on a large number of small investors for capital, as it is not possible for any single investor or a small group of investors to provide the necessary capital because, by definition, large companies have large requirements. Further, the law in some countries prevents financial institutions (for example, banks) from holding equity or cross a certain threshold (for example, mutual funds are prevented from holding more than a certain percentage of shares in any one company). Due to the wide dispersion of shareholding, no single investor will have an incentive to monitor a company. Since diversification can be achieved by holding a dozen stocks, it is possible for institutional investors to hold a small number of stocks and actively monitor the portfolio companies.

[19]One may also use the adjusted present value methodology to value the firm.

Shareholder activism comes from two sources: institutional shareholders and wealthy individuals. Activism may take on two approaches:

- Presenting a proposal at a shareholders' meeting.
- Prod the company's management to change strategy and/or CEO.

Agency costs are more severe for distressed firms in the sense that they can resort to Chapter 11 as a means of entrenchment. An active market for trading of financial claims of distressed firms has emerged in the last two decades. Vulture investors purchase a significant share of the firm's debt with the objective of influencing the terms of the restructuring. For instance, Marvel Entertainment was the target of Carl Icahn when it filed for bankruptcy. While some vulture investors buy undervalued financial claims (debt) with the objective of making a profit, others join the board of directors and become CEO or chairman. The post-restructuring performance of firms in which vultures have active participation tend to be somewhat better than anticipated (Hotchkiss and Mooradian 1997). Both stock and bond markets react positively to vulture purchases. One plausible explanation for the positive reaction is that vultures expedite the resolution of distress, resulting in higher firm value that benefits everyone.

The Sensitivity of CEO Pay to Performance in Distressed Firms

The rise in the usage of stock options and management compensation has attracted a lot of attention in the media. The critics complain that executive compensation is excessive and that stock-based compensation does not motivate employees to outperform competitors. Academic studies of the link between pay and performance in solvent firms have sought to address the following issues:

- What elements of compensation lead to superior corporate performance? For example, do those executives who get fixed salaries do as well or better than those who get a variable pay?
- How should CEO pay be correlated with performance?
- How has direct stock ownership of CEOs changed over time?
- How sensitive is pay for performance?

Most CEO pay packets contain salary, bonus, stock option and long-term incentive plans. To test the association between pay and performance, it is necessary to define pay and performance correctly. Academic studies have broadly tested for correlation between pay (as measured by salary and bonus) and changes in the market value of the firm. One of the most widely-quoted studies on executive compensation is by Jensen and Murphy (1990a, 1990b). They use a least-squares regression to calculate the relationship between the dollar change in salary and bonus and in the shareholder wealth for all companies with at least seven years of pay-change data from 1975 to 1988. They use last year's performance (shareholder wealth) in addition to the current year's performance. The regression result for one CEO is given as follows:

(Change in salary and bonus) = US$ 32,300 + 0.000986 (Change in current year's shareholder wealth) – 0.000219 (Change in the previous year's shareholder wealth).

The total expected change in salary and bonus is the sum of the two coefficients, +98.6 cents and –21.9 cents (= 77 cents) per US$ 1,000 change in value. They estimate regressions for all CEOs and find that for the median CEO in the 250 largest companies, a US$ 1,000 change in corporate value corresponds to just 6.7 cents in salary and bonus over two years. CEOs also hold stock options. Jensen and Murphy also estimate the changes in market value and the value of stock option holding. If we account for all monetary benefits—cash, bonus, stock options, shares owned, a US$ 1,000 change in corporate value corresponds to a change in CEO compensation of US$ 2.59.

The sensitivity of CEO wealth to firm's stock price performance after financial distress is, however, much higher (Gilson and Vetsuypens 1993). They find that almost one-third of all CEOs are replaced in the year of default; those who retain their jobs experience large declines in salary and bonus; CEOs who come from outside the organization are often compensated with stock options. They also find that when shareholder wealth increases by US$ 1,000 in the years after bankruptcy or restructuring, outside replacement CEOs realize on an average, a US$ 49.10 increase in their personal wealth.

Post-Bankruptcy Capital Structure and Performance

Care must be taken in designing the company's capital structure when it emerges from bankruptcy, especially when the industry is volatile. As a thumb rule, one may benchmark non-bankrupt firms or the industry average. If the company emerges with a high level of debt, it may have to issue equity to bring down the leverage in future. This is especially important when the company is making large capital investments that require financial flexibility; a company with heavy debt load may have to pass up valuable investment opportunities. The post-bankruptcy capital structure depends on the securities issued to the bidder.

Some studies have documented the equity performance of firms emerging from bankruptcy. These studies find that the stocks of such companies produce positive, abnormal, long-run (200 days after emergence) returns (about 25 per cent). Further, long-term returns are higher when institutional investors accept only equity in a reorganized firm. Other studies of post-bankruptcy performance find that over 40 per cent of firms (in the sample) that emerge from Chapter 11 continue to experience operating losses in the three years following bankruptcy; 32 per cent re-enter bankruptcy or privately restructure their debts.

Concluding Comments

Most bankruptcy systems have two prime objectives–allocating risk among participants in the economy in a way that is equitable and transparent, and maximizing the value of the insolvent firm for the benefit of all concerned parties. Disputes usually centre on whether to liquidate or reorganize the firm, whether to allow the exiting management to continue or not, who gets paid, how much and when. Where to strike a balance between the rights of debtors and creditors is a political decision.

Appendix: A Comparison of Insolvency Codes

Characteristics	UK	US	Germany	France
Direct costs	Lower	Higher	Medium	N.A.
Automatic stay of secured debt	Yes	Yes	No	Yes
Control rights	Creditors in control	Debtors in control	Creditors committee in control	N.A.
New financing in reorganization	Constrained	Easily accommodated	Can be arranged	N.A.

Source: Franks et al. (1996), Fialski (1994), Hill (1994).

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13
Employee Share Ownership Plans

Corey Rosen

CHAPTER OBJECTIVES

- Highlights the legislative models of employee ownership in an international context
- Highlights the non-legislated models of employee ownership
- Highlights the US experience with employee share ownership plans
- Highlights the empirical evidence on the link between employee ownership and corporate performance

Employee Ownership in a Global Context

Employee ownership is growing rapidly in many countries around the world, largely as a result of explicit government policies, changes in the organization of work and, in some cases, tightening labour markets. The United States has been the leader in the development of employee ownership, through employee stock ownership plans (ESOPs), employee stock purchase plans and stock option plans that provide options to all or most of a company's employees. There are about 11,500 ESOPs in the US covering an estimated 8.5 million employees; and 7 to 10 million employees now receive stock options through broad-based stock option plans. ESOPs are found primarily in closely-held companies (companies whose stocks are not traded on a stock exchange); options

are more common in public companies and rapidly growing knowledge-intensive companies. It is estimated that approximately 20 per cent of all public companies in the US now offer options to all or most employees, at least five times what the number was at the beginning of the 1990s. In addition, million of employees buy stocks in their companies through employee stock purchase plans (ESOPs and stock options are paid for by the company). While there is no firm estimate of just how many people buy stocks, it certainly exceeds 10 million.

Employee ownership is not just growing in the US, however. Several countries have passed laws to encourage broad-based ownership, while companies in many other countries are using existing laws on stock ownership to craft more broadly-granted ownership plans. A few hundred multinational companies also now offer ownership to employees across multiple boundaries. This chapter looks at the forms of broad-based ownership. The second section of this chapter looks at the US experience in detail, because that is where the idea has most firmly taken root. The first section looks at specific models for employee ownership legislation in other countries, along with a brief description of employee ownership alternatives where there is no specific legislation.

Britain and Ireland have legislation similar to the US. Both have ESOPs, stock options plans that are increasingly being offered to rank-and-file employees, and savings plans that encourage investment in employer stock. The Blair government has established a goal of making employee ownership commonplace in the next several years. At least 500 companies with several million employees have plans in those two countries combined. On the continent, France requires larger companies to provide profit sharing for employees, with one of the options being to invest in company stock. A number of Canadian provinces also now have plans to encourage employee purchases of shares in their companies.

In addition, many former communist countries, as well as China, are using employee ownership as a major part of their privatization programmes. Generally, these programmes provide employees with opportunities to purchase shares on very favourable terms. In Poland, employee ownership has been responsible for more privatizations than any other method, while Hungary has specific legislation similar to the US and British ESOP model. About 150 Hungarian companies have used this model to privatize. Slovenia has used employee ownership very successfully to privatize a

number of its industries. Employee ownership has played a more nominal role in many privatizations in Western countries as well. In addition, there are large worker co-operative sectors in Spain and Italy. Employee ownership is less common, however, in developing countries, where only a few nations, most notably Egypt, Jamaica and Zimbabwe have made an explicit effort to encourage this development. Egypt has progressed the farthest, with legislation requiring all privatizations to include broad employee ownership through a trust-like arrangement. Employees must own at least 10 per cent of all privatized companies. Jamaica has the most comprehensive statute of any country, offering multiple modes for employees to become owners, but serious economic problems in that country have impeded the development of employee ownership.

Legislative Models for Employee Ownership

The US, Britain, Ireland and Canada have the most comprehensive employee ownership legislation among developed countries; Poland, Hungary, Slovenia and Russia, the most developed frameworks in former communist countries; Egypt and Jamaica, the strongest government role in developing countries. Employee ownership may actually proceed the fastest in China. Although it lacks any legislative model, local governments appear to be using employee ownership widely as a means to privatize businesses they own, especially in the booming south-west part of the country.

The US/UK model has three basic components. First, ESOPs provide that companies can establish non-taxable employee benefit trusts to hold shares for employees. Companies fund these trusts by (*a*) contributing new issues of shares directly to them, (*b*) contributing cash to buy shares, or (*c*) having the trust borrow money to buy shares, with the company repaying the loan. Within very broad parameters, company contributions in each case are tax deductible. Employees do not purchase shares, directly or indirectly, under these arrangements. Sellers of shares to these plans in non-listed companies can also qualify for special tax treatment of their capital gains, and employees do not pay tax on the benefit they receive until they actually take the shares out of the trust. In return for tax benefits, companies must run the plans in defined ways that do not discriminate in favour of higher-paid employees. Companies

have the right to determine who the trustees of the plan will be, but the trustees must comply with legal standards to act 'for the exclusive benefit of plan participants'. Employees do not get their shares until they leave the company, at which time they can shelter taxation of the shares by putting them into a retirement account. ESOPs are found in both listed and non-listed companies.

A second legislative component encourages employee share purchases. In the US, this is done through two approaches. One allows companies to provide employees the opportunity to use after-tax payroll deductions to purchase shares at up to a 15 per cent discount off either the current price or a price defined at the time they committed to make the purchase (most plans provide for this 'look-back' feature over a six- or twelve-month period). For instance, an employee might join the plan on 1st June, pledging to put US$ 50 per week into the plan for the next 26 weeks. At the end of that six-month period, the employee can take the US$ 1,300 that has accumulated and purchase shares at either 15 per cent off the price of the stock on 1st June or 15 per cent off on the price of the shares on 1st December. Some companies provide a longer offering period, while others provide shorter periods or less generous discounts. There are no special tax incentives for these plans for companies or employees.

A second approach allows employees to purchase shares out of pre-tax earnings in a special kind of savings plan; companies often put their own shares into these plans as a company contribution as well. For instance, an employee might agree to defer US$ 50 per week, before taxes are paid on that amount, into a company-sponsored savings plan. He or she could invest part or all of that in company stock, and the company might match some of that investment with company stock as well. While the investments are in the plan, they are not taxed.

In the UK, the plans are very similar. The 'Save-as-You-Earn' plan allows employees to put pre-tax money aside in an account where it earns interest, with an option during a defined period to purchase company shares at the price they were offered at the start of the savings period. If the employee chooses not to purchase shares, he or she gets the money put aside back, plus interest.

Under a newly enacted plan, the so-called Share Investment Plan (SIP, formerly called the 'AESOP', or all-employee share ownership plan), companies are given a menu of choices:

1. Employees can buy up to 3,000 pounds of stock per year from pre-tax salary.
2. Employers can match employee deferrals with tax-deductible free shares on up to a 2-for-1 basis.
3. Employers can contribute tax-deductible free shares on a non-matching basis for up to 3,000 pounds per employee per year.
4. Dividends on shares can be reinvested in dividend shares.

Shares left in the AESOP trust for five years are not subject to payroll or social insurance taxes. Matching or free shares held three to five years, employees pay income tax on the market value of the shares at lower than the current market price or the price on grant. If these shares are held for less than three years, taxes are due on the market value of their shares as of the date they are withdrawn. Shares employees purchase are subject to income and social insurance taxes based on the gain made on the shares.

Finally, companies in both the countries, as well as a growing number of other countries, are offering stock options not just to executives, but to most or all employees. Options allow employees to purchase shares at a price fixed for a defined number of years into the future. If the shares do not go up in value, the option is not exercised; if they do, they can be exercised, and the employee realizes an often substantial gain. The specific tax and accounting treatment of these plans varies, but generally the employee does not pay any tax until the option is exercised and an actual gain is received. Generally, if the shares are held for a minimum period, the gains are taxed as a capital gain (which is usually a lower rate); otherwise, they are taxed as wages. Companies can usually deduct the cost of providing the option when it is taxed as ordinary income; treatment varies for the company when it is taxed to the employee as a capital gain.

Companies are granting broad options mostly to attract and retain good people, not because of any specific legislative strategy, although the potentially favourable tax treatment of options to employees relative to other forms of income makes them an attractive compensation vehicle. The tax treatment of options is not always favourable, however. Some countries, such as France, provide punitive taxes on options; others, such as some Northern European countries, tax options on grant, meaning that the employee must pay tax on the acquisition of the right to buy

shares. An employee might never actually use this right, however, if the share price goes down.

Increasingly, multinational companies, especially those based in the US and the UK, are offering variations of their options or share purchase plans to all their employees worldwide. This is occurring despite the manifold difficulties of implementing and administering these plans in multiple countries with widely varying laws.

A few provinces in Canada have created a somewhat different approach to employee ownership. British Columbia has the most advanced of these systems. There the government provides a tax credit of up to 40 per cent of the cost of purchase for employees who buy shares in British Columbia-based companies. The legislation requires that the share purchase programme must be available to all employees in the company. Employees can also purchase the shares through their holdings in private, tax-deductible savings plans called Royal Savings Plans, further increasing the tax benefit. In addition, the government funded a provincial organization to promote the concept. Thanks to these efforts, the programme has had considerable success in the province.

In former communist countries, as well as in China, employee ownership plays a role of varying significance as a means to privatize state-owned enterprises. In Russia, for instance, most large (over 200 employees) enterprises were privatized by allowing employees to buy a majority of the shares at heavily-discounted prices. Employees would end up with a majority of the shares in these companies, but were free to sell them at any time. As a result, employee ownership is gradually diminishing in Russia, although some companies will remain significantly owned by their workers for many years. In Poland, majority employee ownership through direct employee purchases also has been the most popular way to privatize enterprises, although most of the largest companies were sold in other ways. Unlike Russia, however, employees are holding on to their shares for much longer periods of time. Hungary created laws somewhat similar to the US ESOP, and about 150 companies were sold to employees this way. Most of these companies will remain employee owned for some time because the shares are held in trust, not individually. Other Eastern European and former Soviet republics have used employee ownership as well, to varying degrees. Only in Poland, Slovenia and Hungary, however, does employee ownership appear to have a chance of any long-term presence in the economy.

In Egypt, the law requires that employees own at least 10 per cent of privatized companies. Most large enterprises in Egypt were at one time owned by the government. They are now gradually being sold off, usually to the highest bidder. Employees, however, also acquire a stake in these companies through what is called an 'employee shareholder association (ESA)'. The ESA is given the shares at what is usually less than market value, and must pay for them over time out of dividends the shares earn. Employees can acquire larger stakes in the companies as well, and several companies have been sold entirely to employees. The employees receive an allocation of shares through the association and receive the shares when they leave the company, when they must be sold back to the association to allocate to new employees. Some of the ownership arrangements have been very successful, and employees have bought a majority stake in a number of companies. The difficulty with the Egyptian law is that it does not allow for share acquisitions through means other than dividends; so when companies do not make profits, the loans for the shares have to be renegotiated. Egyptian officials are currently re-examining the law to look for ways to make it work more effectively.

The Slovenian law provides that 20 per cent of the shares of a company are transferred to special pension and social funds for the benefit of the general populace, 20 per cent are transferred to a special investment fund for future distribution to all Slovenian citizens, 20 per cent are made available for free distribution to employees, and 40 per cent are sold either to insiders on preferential terms or to commercial interests on market terms. If the 40 per cent stake is sold to insiders, employees can buy shares at a 25 per cent discount, with a cash down payment for at least 20 per cent of these costs. The remaining shares are bought at a fixed price indexed for inflation over four years at an interest rate of two per cent. In some cases, however, the entire company can be sold to employees via something like the Hungarian ESOP.

China presents one of the most intriguing, but difficult-to-document, cases. The central government has decreed that employee ownership is an important part of 'socialism with Chinese characteristics'. In the last few years, it has become the preferred method of privatization. Generally, employees can buy shares in privatized companies, and then can sell them only to other employees. Some provinces and/or companies provide for financing for the purchases. Unfortunately, good information on

just how this is occurring, or how often, is very difficult to obtain. The National Centre for Employee Ownership has held two conferences in China and received delegations from the State Committee of Economic Restructuring, officials from which have indicated that hundreds or thousands of businesses are being transformed this way. However, they do not know just how this is occurring or how often, but the number of enterprises sold this way is probably in thousands.

The design of the Jamaican ESOP law is perhaps one of the most progressive in the world. The alternative forms of employee share ownership encompass employee share purchase arrangements, employer share granting schemes, and share option plans. The provision of the law that allows entities that have a 'significant economic relationship' with an employer to receive ESOP shares is the only one of its kind in the world. The acquisition of shares can be accomplished through the following mechanisms:

- Employee purchases–salary deferral, purchases made from loans by the company, or purchases made by savings or loaned funds from other sources than the employer.
- Employer grants–either straight share grants or grants made to pay off a loan from a bank.
- Option awards–where the appreciation of share value is captured by employees through the exercise of an option to purchase shares at a fixed price over a certain period of time.

However a number of factors have hindered ESOP acceptance and imple-mentation in Jamaica including:

1. A prolonged economic decline that has resulted in drastically depressed share prices, high interest rates, sliding exchange rates, financial sector crisis, a halt to government divestments and weakened investor confidence.
2. Antagonistic labour/management relations that result in mistrust, hostile negotiations and high levels of employee terminations.
3. Structural concerns with the ESOP law itself, including restrictive provisions on participation requirements, ratios on the amount of shares top- and bottom-level employees can purchase, and valuation issues.

4. Historical conceptions of ownership resulting in current owners forgoing provisions of the law that would allow employee grants of shares and insisting that any transformation of ownership be accomplished by employees purchasing shares.
5. High costs of designing and administering an ESOP based on historical standards of what is the 'normal' cost of implementing an employee benefit plan.

The use of employee ownership in privatizations has been primarily to win political support for the process by giving workers some of its benefits. That same idea informed a number of privatizations in Western countries, particularly England and to some extent in France. Employees could buy shares, usually up to 10 per cent of the offering, at a reduced price, but they could (and usually did) sell them soon after the share value went up.

Outside of Egypt, Zimbabwe is the only developing country to look seriously at employee ownership so far on a countrywide basis. It is now in the stage of evaluating how to proceed.

Evaluating Employee Ownership Models

In evaluating the success of legislative approaches to employee ownership, one of the most notable features is that even with the best-developed legislation, the use and acceptance of plans is slow, taking place gradually over years or decades. The original legislation is almost invariably amended, sometimes frequently, as legislators learn about barriers that were previously not anticipated. In the US, for instance, there have been about 400–800 new ESOPs set up every year since the law became effective, out of about 250,000 companies that would be candidates for ESOPs. ESOPs now cover about 7 per cent of the private sector workforce. In England, ESOP legislation has actually not been used very much; instead, plans similar to what the law envisions, but not completely within its bounds, have been submitted case by case to the government for approval. The new Labour government now appears likely to take these experiences and incorporate them into the basic statute.

Similarly, some of the most dramatic developments in employee ownership occur outside of the legislative models specifically designed to encourage it. This is most notable in the case of stock options. Originally,

these were conceived simply as a means to reward executives. There were no special rules to encourage companies to grant them more widely. But starting with the late 1980s, many companies in the US, and now in Britain as well, started giving them to most or all employees. This can raise some regulatory and legislative issues about how to rethink the laws for these plans so that they fit the emerging practice.

It is also notable that in every country where employee ownership has become a permanent and successful part of the economy, there are private organizations whose sole function is to promote a better understanding and awareness of the concept, such as the National Centre for Employee Ownership and the ESOP Association (and several local organizations) in the US, the ESOP Centre in London, the Employee Share Ownership and Investment Association in Canada, and the ESOP Centre in Hungary. These organizations provide information through meetings and publications, conduct training, maintain lists of qualified professional advisors, perform research and help companies learn about 'best practices' in the management of employee ownership, both legally and in terms of employee relations. They also help publicize successful models so that businesses and unions have a sense of how employee ownership can succeed. These organizations take time to develop, and once developed, more time to have an impact. Sharing ownership is a major change for most companies and employees; it is not realistic to expect that any law, no matter how well crafted, will result in a dramatic growth in employee ownership over the short term. It thus seems imperative that any country considering employee ownership assure that such an infrastructure is created along with it.

Employee Legislation Approaches

In terms of models for employee ownership legislation, there are three principal approaches. The most common is for employees to be allowed to purchase shares on some kind of subsidized and/or tax-favoured basis. This has intuitive appeal. It is relatively simple. In privatization scenarios, it helps provide support for the sale of government enterprises to private interests. It reassures shareholders that they are not giving away ownership to employees, although there may be some company support to help employees buy stock. Perhaps most important, it complies

with what seems to be a commonly held, if unproven, assumption that employees will really only value ownership if they have to pay for it themselves.

This approach raises many difficult issues, however. In many countries, employees cannot realistically be expected to buy much stock. Unless the plans require universal involvement, or have terms so appealing so that hardly anyone will say no; it means that participation in the offering may be limited in terms of the percentage of employees buying shares. There will also usually be large disparities in shareholdings between employees. In many privatization cases, the subsidies are only offered at the time of privatization, meaning future employees will have little incentive to become owners. In non-privatization cases, these plans rarely result in employees owning more than a small percentage of the company. Finally, and perhaps most seriously, the ability of employees to sell when they want (usually a feature of these plans) means that few will hold on to the shares very long. Often, this means that not only will the total number of shares held by employees decline, but the number of employees owning stock will decline as well, especially where the subsidies are offered primarily at the programme's start.

The second common approach is to offer broad-based stock options. While this does require employees actually to purchase shares at some point, it would be foolish for people not to buy the shares when the options are 'in the money' (you can buy stock for less than its market price), unless, of course, the employee does not have the cash to make the purchase or there is an extended holding period subsequent to the purchase before employees can sell the stock (in which case there is at least a risk that the share price will decline below the purchase price). Companies usually solve this problem by providing mechanisms to make the money available to employees, or to provide a 'cashless' exercise in which the company buys the shares for the employees and gives them the difference between the grant and exercise price, either in cash or in shares.

Option plans can be designed so that everyone participates, and by granting options on a regular basis, employees always have a future equity stake in the company even if they do periodically exercise some of their options and sell their shares.

On the other hand, shareholders sometimes object that options are granted too widely and too generously, diluting shareholder value.

They may also complain that employees can get rewarded simply for the stock market in general going up, although option plan design can address this. Absent government rules about how options are distributed, there is a tendency to provide disproportionate amounts to top management or provide only token amounts to employees. Employees also cannot use options to buy control of a company, and employees rarely hold a substantial collective ownership interest because they tend to sell shares quickly after they exercise the options. Options are, as a result, not a means for employees to exercise influence or control in a company.

Finally, there is the trust-based model, most notably the ESOP, but also the Jamaican and Egyptian versions. Unlike share purchase and option models, ESOPs do aggregate ownership and can be used to acquire large and ongoing stakes in the company for employees. New employees are automatically included in the plan under rules designed to assure equitable participation. Tax benefits can make the plans attractive to companies and employees.

On the other hand, ESOPs typically require the largest government subsidies. They are more complicated than other plans to design, regulate and administer. They generally do not require direct employee investment. That is a plus in that it assures greater employee ownership, but to many shareholders and managers, it is a negative. They believe employees should have to purchase shares, not just be given them. This has been a particular issue in public companies, where shareholders want these plans to be 'shareholder neutral', meaning employees either have to pay for the shares directly or through concessions.

There is, however, no perfect model for employee ownership. Each country's culture, tax and legal framework, economic situation, labour relations situation, corporate structure and other issues must be addressed. In drafting legislation, however, several key issues need to at least be considered:

1. Is the goal to make employee ownership an ongoing and significant part of the economy, or is it just a transition vehicle? If it is the former, then the means have to be created to assure that employees will have an ongoing equity stake in the company, not just shares they can quickly sell. Provisions also have to exist for new employees to become owners.

2. Is the goal to have employees own significant collective interest in companies that can be used as a substantial part of their personal wealth? If so, there will have to be incentives for the company and/ or the employee to provide or acquire shares. It will be the rare case that employees will end of with large equity stakes primarily out of their own investment decisions, perhaps with small subsidies.

3. Is employee ownership seen as a way to transform corporate culture? If so, it is critical that the plan provide for significant amounts of ownership to all employees on an ongoing basis. Having some employees own stock, but not others, makes it impossible for companies to ask employees to think and act like owners.

4. Is employee ownership seen as a mechanism for employees to exert control? If so, employees need to have specified voting rights, rights for board representation and mechanisms for ongoing significant ownership.

5. Are there mechanisms in place to assure equitable treatment of participants? Most laws are at least aimed at equitable treatment for employees. Issues such as how shares are allocated, who can participate, when the share values can be realized, and so on, need to be thought through carefully.

6. Are there procedures to assure that stock is bought and sold at fair prices and that if employees are purchasing shares, they have appropriate information to make the choice?

7. Is there a way to make sure that companies and employees know about the programme and the best practices for operating it? In the absence of such a central source of information, no employee ownership programme is likely to succeed.

The creation of employee ownership legislation is obviously a complex process. The results that employee ownership has achieved, however, make it appear to be one that is worthwhile.

Non-Legislated Approaches

In many countries, most notably India (in the technology sector) and Finland (in all sectors), it is very common for companies to provide options to a broad range of employees, and often to all employees. Tax laws for options vary considerably from country to country, but there is

an emerging direction of change such that options are not taxed when they are granted, but rather when they are either exercised or the stock is sold (or both).

Stock options are just one form of an individual equity arrangement, so-called because stock is allocated to individuals, not to a trust or other collective ownership interest. There are four common kinds of individual equity plans, each of which can be found to varying degrees in different countries: stock options, restricted stock, equity equivalent plans, primarily stock appreciation rights and phantom stock, and stock purchase plans. With limited exceptions, they can be given to anyone on any basis the company and the employee contractually agree to.

The most common form of individual equity compensation plans is the *stock option*. A stock option gives its holder the right to buy shares at a price fixed on grant for a defined number of years into the future. There are two principal kinds of stock options, non-qualified options and incentive stock options. These will be described next in greater detail.

The second most common form of individual equity compensation is *restricted stock*. Restricted stock can entail an outright grant of stock, or the sale of shares, either for full price or at a discount. The holder of the restricted stock, however, cannot take possession of the shares until specified conditions have been met, usually a certain number of years of service or some form of performance requirement (such as the company meeting profit targets or the individual's department meeting sales targets).

Stock appreciation rights (SARs) and *phantom stock* are not actual awards of stock or the right to buy stock. Instead, they give the holder a cash bonus based on either the increase in the value of shares over a period of time (stock appreciation rights) or the value of the stock itself (*phantom stock)*. In theory, this award could be made in the form of an equivalent value in shares, but this is not common practice.

Restricted stock, phantom stock and SARs are discussed next in the chapter in more detail.

Stock Options Definitions

A few key concepts help define how stock options work:

Exercise: The purchase of stock with an option.

Exercise price: The price at which the stock can be purchased. This is also called the *strike price.* In most plans, the exercise price is the current fair market value of the stock at the time the exercise is made.

Grant price: How much the option holder must pay to exercise the option.

Spread: The difference between the grant price and the exercise price at the time of exercise.

Option term: The amount of time the employee can hold the option prior to its expiring.

Vesting: The requirement, usually in years of service, that must be met for an option holder to be able to exercise an option.

In a typical option cycle, a company grants an employee options to buy a stated number of shares at a defined grant price. The options vest over a period of time. Once vested, the employee can exercise the option at the grant price at any time over the option term up to the expiration date. For instance, an employee might be granted the right to buy 1,000 shares at US$ 10 per share. The options vest 25 per cent per year over four years and have a term of 10 years. If the stock goes up, the employee will pay US$ 10 per share to buy the stock. The difference between the US$ 10 grant price and the exercise price is the spread. If the stock goes to US$ 25 after seven years, and the employee exercises all options, the spread would be US$ 15 per share.

Restricted Stock

Restricted stock provides the employee with the right to purchase shares at fair market value or a discount, or simply grants shares to employees outright. However, the shares employees acquire are not really theirs yet– they cannot take possession of the shares until specified restrictions lapse. Most commonly, the restriction is that the employee work for the company for a certain number of years, often three to five. The time-based restrictions may pass all at once or gradually. Any restrictions could be imposed, however. The company could, for instance, restrict the shares until certain corporate, departmental or individual performance goals are achieved. While the shares are subject to restrictions, companies can choose whether to pay dividends, provide voting rights or give the employee other benefits of being a shareholder.

Phantom Stock and Stock Appreciation Rights

Stock appreciation rights (SARs) and phantom stock are very similar plans. Both essentially are cash bonus plans, although some plans pay out the benefits in the form of shares. SARs typically provide the employee with a cash payment based on the increase in the value of a stated number of shares over a specific period of time. Phantom stock provides a cash or stock bonus based on the value of a stated number of shares, to be paid out at the end of a specified period of time. SARs may not have a specific settlement date; like options, the employees may have flexibility in when to choose to exercise the SAR. Phantom stock pays dividends; SARs would not. When the payout is made, it is taxed as ordinary income to the employee and is deductible to the employer. Some phantom plans condition the receipt of the award on meeting certain objectives, such as sales, profits or other targets. These plans often call their phantom stock performance units. Phantom stock and SARs can be given to anyone, but if they are given out broadly to employees, there is a possibility that they will be considered retirement plans and will be subject to federal retirement plan rules. Careful plan structuring can avoid this problem.

Because SARs and phantom plans are essentially cash bonuses or are delivered in the form of stock that holders will want to cash in, companies need to figure out how to pay for them. Does the company just make a promise to pay or does it really put aside the funds? If the award is paid in stock, is there a market for the stock? If it is only a promise, will employees believe the benefit is as phantom as the stock? If it is in real funds set aside for this purpose, the company will be putting after-tax dollars aside and not in the business. Many small, growth-oriented companies cannot afford to do this. The fund can also be subject to excess accumulated earnings tax. On the other hand, if employees are given shares, the shares can be paid for by capital markets if the company goes public or by acquirers if the company is sold.

If phantom stock or SARs are irrevocably promised to employees, it is possible the benefit become will be taxable before employees actually receive the funds. A 'rabbi trust', a segregated account to fund deferred payments to employees, may help solve the accumulated earnings problem, but if the company is unable to pay creditors with existing funds, the money in these trusts goes to them. Telling employees their right to the benefit is not irrevocable, or is dependent on some condition (working another

five years, for instance), may prevent the money from being currently taxable, but it may also weaken employee belief that the benefit is real.

Employee Stock Purchase Plans

Broad-Based Plans

Million of employees become owners in their companies through employee stock purchase plans (ESPPs). These plans generally allow employees to have deductions taken out of their pay on an after-tax basis. These deductions accumulate over an 'offering period'. At a specified time or times employees can choose to use these accumulated deductions to purchase shares or they can get the money back. Some plans can offer discounts on the price of the stock. Some plans allow this discount to be taken based on *either* the price at the beginning or end of the offering period (the so-called 'look-back feature'). Other plans offer employees free matching shares for buying stock and/or holding on to stock after purchase.

ESPPs are found almost exclusively in public companies because the offering of stock to employees usually requires compliance with costly and complex securities laws. Closely-held companies can, and sometimes do, have these plans, however.

The US Experience

There are now over 25 million US employees who own stock in their companies through employee stock ownership plans (ESOPs), broadly-granted stock options, or 401(k) plans with heavy concentrations of employer stock [a 401(k) plan is a kind of employee savings plan].

There are a number of reasons for this. ESOPs provide attractive tax benefits. They allow companies to borrow money and repay it in pre-tax dollars. They provide a way for owners of closely-held businesses to sell all or part of their interests and defer taxation on the gain. And they make it possible for companies to provide an employee benefit simply by contributing tax-deductible shares of their own stock, among other benefits. Broad stock options do not provide special tax benefits, but give growing companies a way to compensate employees with equity rather than more cash. Putting company stock in 401(k) plans provides a less expensive way for companies to match employee deferrals than

matching in cash. Employee stock purchase plans (often called Section 423 plans, although not all such plans fall under this part of the tax code from which the name derives) allow employees to put aside part of their paycheques to buy stock, usually at a significant discount.

Just as important, however, are potential productivity gains. Studies consistently show that when broad employee ownership is combined with a highly-participative management style, companies perform much better than they otherwise would be expected to do. Neither ownership nor participation accomplishes these significant gains on its own. Companies want employees to 'think and act like owners'. What better way to do that than to make them owners?

Finally, employees are beginning to expect equity, at least in some sectors. In technology firms, for instance, it is increasingly the norm to offer all employees stock options because companies have a hard time attracting good people.

As a result of all this, during the last decade, the number of companies sharing ownership broadly with employees has grown substantially. While precise numbers are not available, we estimate that employees own, or have options to own, stock worth about US$ 800 billion, or about 8 per cent of all the stock in the US.

As of January 2001, there were about 11,500 ESOPs in the US, covering over 8.5 million participants and controlling about US$ 500 billion in assets. Of these, about 5 per cent are in publicly-traded companies and 95 per cent in closely-held firms. The median percentage ownership for ESOPs in public firms is about 10–15 per cent. Most public firms maintain an ESOP along with other benefit plans. The median percentage ownership for private firms is about 30–40 per cent, with about 3,000 companies now majority employee owned. While the typical firm has 20 to 500 employees, employees own a majority of the stock of such companies as Lifetouch (15,000 employees), TTC Inc. (30,000 employees), Publix Supermarkets (109,000 employees) and Science Applications (39,000 employees). About half the ESOPs in private firms are used to buy out an owner; the rest are typically used as a primary employee benefit plan, sometimes in conjunction with borrowing money for capital acquisition.

While ESOPs are the main vehicle for employee ownership, 401(k) plans are not far behind. By 2000, these plans owned about US$ 250

billion in company stock, primarily in public companies. Based on various recent surveys, it appears about 60 per cent of the corporate matching funds in public company 401(k) plans is in company stock, with a much smaller percentage in private firms. Employees can usually also choose to buy shares in their own company in public company 401(k) plans as well. Overall, in 2000, about 18 per cent of all 401(k) assets were in the form of employer stock. While these plans own a great deal of company stock, they rarely own more than 10 per cent of any one company, and few companies with employer stock in 401(k) plans really think of themselves as 'employee ownership' companies.

In addition, a growing number of companies are providing stock options to most or all employees. PepsiCo, Starbucks and Microsoft are among the better known examples. An estimated 15 per cent to 20 per cent of all public companies now do this, as well as perhaps thousands of private firms (no precise estimates are available). In one survey of electronics firms, just over half the responding companies said they provide options to most or all employees, with companies under 100 employees being the most likely to do so. A 2000 study by the NCEO concluded that at least 7–10 million employees now receive stock options through plans that offer stock to most or all employees. No reliable data are available on the value of all the outstanding employee options, but various surveys put it in the neighbourhood of US$ 500 billion as of early 2001 (although a majority of that is in the hands of senior management). Stock option companies are not motivated by tax incentives, but rather by the conviction that sharing ownership builds a stronger company.

Finally, as many as 15 million employees participate in employee stock purchase plans, almost entirely in public companies. Typically, these plans allow employees to put aside payroll deductions for 6 to 12 months. Accumulated deductions can (but do not have to be) then used to buy stock, typically at 15 per cent off the lowest of either the price at the end of the deduction period or the beginning. These plans have no special tax benefits for companies, but offer employees the potential to treat gains as capital gains. Unfortunately, there are no good data on the exact number of participants or the size of their holdings, but it would clearly be much less than 401(k) plan assets in company stock.

Because ESOPs are the most complicated and most powerful employee ownership tool, we will start this overview with an explanation of how they work, followed by a discussion of stock options and 401(k) plans.

What is an ESOP?

An ESOP is a kind of employee benefit plan. Governed by ERISA (Employee Retirement Income Security Act), ESOPs were given a specific statutory framework in 1974. In the ensuing 12 years, they were given a number of other tax benefits. Like other qualified deferred compensation plans, they must not discriminate in their operations in favour of highly-compensated employees, officers, or owners. To assure that these rules are met, ESOPs must appoint a trustee to act as the plan fiduciary. This can be anyone, although larger companies tend to appoint an outside-trust institution, while smaller companies typically appoint a manager or create an ESOP trust committee.

The most sophisticated use of an ESOP is to borrow money (a 'leveraged' ESOP). In this approach, the company sets up a trust. The trust then borrows money from a lender. The company repays the loan by making tax-deductible contributions to the trust, which the trust gives to the lender. The loan must be used by the trust to acquire stock in the company. Proceeds from the loan can be used by the company for any legitimate business purpose. The stock is put into a 'suspense account', where it is released to employee accounts as the loan is repaid. However, for purposes of calculating the various contribution limits described next, the employee is considered to have received only his or her share of the principal paid that year, not the value of the shares released. After employees leave the company or retire, the company distributes to them the stock purchased on their behalf, or its cash value. In practice, banks often require a second step in the loan transaction of making the loan to the company instead of the trust, with the company re-loaning the proceeds to the ESOP.

In return for agreeing to fund the loan through the ESOP, the company gets a number of tax benefits, provided it follows the rules to ensure that employees are treated fairly. First, the company can deduct the entire loan contribution it makes to the ESOP, within certain payroll-based limits described next. That means the company, in effect, can deduct interest and principal on the loan, not just interest. Second, the company can deduct dividends paid on the shares acquired with the proceeds of the loan that are used to repay the loan itself (in other words, the earnings of the stock being acquired help pay for the stock itself). Again, there are limits, as described next in sections on the rules of the loan and contribution limits.

The ESOP can also be funded directly by discretionary corporate contributions of cash to buy existing shares or simply by the contribution of shares. These contributions are tax-deductible, generally up to 25 per cent of the pay of the total payroll of plan participants.

ESOP Applications

The ESOP can buy both new and existing shares, for a variety of purposes.

- The most common application for an ESOP is *to buy the shares of a departing owner of a closely-held company.* Owners can defer tax on the gain they have made from the sale to an ESOP if the ESOP holds more than 30 per cent of the company's stock (and certain other requirements are met). Moreover, the purchase can be made in pre-tax corporate dollars.
- ESOPs are also used *to divest or acquire subsidiaries, buy back shares from the market (including public companies seeking a takeover defense), or restructure existing benefit plans* by replacing current benefit contributions with a leveraged ESOP.
- The use of ESOPs first envisioned by ESOP creator Louis Kelso was *to buy newly issued shares in the company, with the borrowed funds being used to buy new productive capital.* The company can, in effect, finance growth or acquisitions in pre-tax dollars while these same dollars create an employee benefit plan.
- The above uses generally involve borrowing money through the ESOP (a leveraged ESOP), but a company can simply contribute new shares of stock to an ESOP, or cash to buy existing shares, *as a means to create an employee benefit plan.* As more and more companies want to find ways to tie employee and corporate interests, this is becoming a more popular application. In public companies especially, an ESOP contribution is often used as part or all of a match to employee deferrals to a 401(k) plan.

Rules for ESOP Loans

ESOPs are unique among benefit plans in that they can borrow money. Typically, a lender will loan to the company, with the company re-loaning the money to the ESOP. The ESOP then uses the loan proceeds to

buy new or treasury shares of stock (when the ESOP is used to finance growth) or existing shares (when the ESOP is used to buy shares of current owners). Of course, the ESOP itself does not have any money to repay the loan; so the company makes tax-deductible contributions to the plan that the plan then uses to repay the lender. This means, in effect, the company can deduct principal and interest on the loan, provided the requirements described next are met.

The ESOP can borrow money from anyone, including commercial lenders, sellers of stock, or even the company itself. Any loan to an ESOP must meet several requirements, however. The loan must have reasonable rates and terms, and must be repaid only from employer contributions, dividends on shares in the plan, and earnings from other investments in the trust contributed by the employer. There is no limit on the term of an ESOP loan other than what lenders will accept (normally five to 10 years), and the proceeds from the sale of shares to the ESOP can be used for any business purpose.

Shares in the plan are held in a suspense account. As the loan is repaid, these shares are released to the accounts of plan participants. The release must follow one of two formulas. The simplest is that the percentage of shares released equals the percentage of principal paid, either that year or during whatever shorter repayment period is used. In such cases, however, the release may not be slower than what normal amortization schedules would provide for a 10-year loan with level payments of principal and interest. The principal only method usually has the effect of releasing fewer shares to participants in the early years. Alternatively, the company can base its release on the total amount of principal and interest it pays each year. This method can be used for any loan, but must be used for loans of over 10 years.

In either case, it is important to remember that the value of the shares released each year is rarely the same as the amount contributed to repay the principal on the loan. If the price of the shares goes up, the amount released will be higher, in dollar terms, than the amount contributed; if it goes down, the dollar value of the amount released will be lower. The amount *contributed* to repay the principal on the loan is what counts for determining if the company is within the limits for contributions allowed each year and for the purpose of calculating the tax deduction. The value of the shares released, however, is the amount used on the income statement, where it counts as a compensation cost.

Limitations on Contributions

In 2001, Congress made significant changes to contribution limits in all-employee retirement plans. The discussion that follows describes how plans will operate when these rules become effective 1 January 2002. At the end of this section, the major differences under law prior to this are described.

First, it is important to understand that in a leveraged ESOP, the amount the company is considered to have contributed to the ESOP, or that is defined as an 'annual addition' to an employee's account, is based on the amount of principal paid off each year attributable to each employee's account. The actual addition to an employee's account, however, is the value of the shares released, but this value is not the one used for contribution and annual addition testing.

Congress was generous in providing tax benefits for leveraged ESOPs, but there are limits. Generally, companies can deduct up to 25 per cent of the total eligible payroll of plan participants to cover the principal portion of the loan and can deduct all of the interest they pay. Eligible pay is essentially all the pay, including employee deferrals into benefit plans, of people actually in the plan, of US$ 200,000 per participant or less (in 2002 dollars). However, company contributions to other defined contribution plans, such as stock bonus, 401(k), or profit-sharing plans, must be counted in this 25 per cent of pay calculation. On the other hand, 'reasonable' dividends paid on shares acquired by the ESOP can be used to repay the loan, and these are not included in the 25 per cent of pay calculations. If employees leave the company before they have a fully vested right to their shares, their forfeitures, which are allocated to everyone else, are not counted in the percentage limitations. If the ESOP does not borrow money, the annual contribution limit is now also 25 per cent of covered pay (it had been 15 per cent). Again, contributions to other plans reduce this amount.

There are a number of limitations to these provisions, however. First, no one ESOP participant can get a contribution of more than 100 per cent of pay in any year from the principal payments on the loan that year, which are attributable to that employee, or more than US$ 40,000 (a number that will be increased for inflation in US$ 1,000 increments), whichever is less. In figuring payroll, pay over US$ 200,000 per year (in 2002 dollars) does not count towards total contribution limits. Second, if

there are other qualified benefit plans, these must be taken into account when assessing this limit. This means that employee deferrals into 401(k) plans, as well as other employer contributions to 401(k) plans, stock bonus, or profit-sharing plans, are added to the ESOP contribution and cannot exceed 100 per cent of pay in any year.

Third, the interest is only excludable from the 25 per cent of pay individual limit if not more than one-third of the benefits are allocated to highly-compensated employees, as defined by the Internal Revenue Code (Section 414 [q]). If the one-third rule is not met, forfeitures are also counted in determining how much an employee is getting each year. If the company sponsoring the ESOP is an S corporation, interest is also not deductible.

The rules described earlier apply for plan years after 31 December 2001. For plan years prior to that, rules were much more restrictive with respect to contribution limitations. The major differences are as follows:

- The limit on employer contributions in non-leveraged plans is only 15 per cent of pay. 'Pay' is defined to exclude employee deferrals into 401(k) plans (after 2001, it is included).
- The limitation on how much can be added to an employee account each year from employer contributions and employee deferrals is 25 per cent of pay.
- Pay over US$ 170,000 is not defined as 'eligible pay' for contribution limits.

Using Dividends to Repay the Loan

The 1986 tax act allowed companies to take a tax deduction when using 'reasonable' dividend payments to repay the ESOP loan. These payments do not count against the contribution limits described earlier. While the term 'reasonable' has never been defined, most consultants believe it is a percentage of share value consistent with what other companies in the industry would pay given similar levels of profits. Many companies are using preferred stock in their ESOPs to allow for higher dividend payments. Whatever kind of stock is used, the amount of the dividends must be allocated to employee accounts. Companies normally allocate these amounts in the form of shares released from the suspense account.

Companies can also 'pass through' dividends directly to employees. Typically, companies would pay dividends on allocated shares (whether in a leveraged or non-leveraged plan). These dividends are also tax-deductible to the company. Finally, dividends that are voluntarily reinvested by the employee back into company stock in the ESOP are also tax-deductible to the company. It is possible to combine this arrangement with a 401(k) plan in such a way that the employee can do this on a pre-tax basis, something that is done mostly in publicly-traded companies.

How Shares Get to Employees

The rules for ESOPs are similar to the rules for other tax-qualified plans in terms of participation, allocation, vesting and distribution, but several special considerations apply. All employees over age 21 who work for more than 1,000 hours in a plan year must be included in the plan, unless they are covered by a collective bargaining unit, are in a separate line of business with at least 50 employees not covered by the ESOP, or fall into one of several anti-discrimination exemptions not commonly used by leveraged ESOPs. If there is a union, the company must bargain in good faith with it over inclusion in the plan.

Shares are allocated to individual employee accounts based on relative compensation (generally, all W-2 compensation is counted), on a more level formula (such as per capita or seniority), or some combination. The allocated shares are subject to vesting. Employees must be 100 per cent vested after five years of service, or the company can use a graduated vesting schedule not slower than 20 per cent after three years and 20 per cent per year more until 100 per cent is reached after seven years. A faster vesting schedule applies where the ESOP contribution is used as a match to employee 401(k) deferrals. There 'cliff' vesting must be complete in three years and graduated vesting must start after two years and be completed no later than after six years.

When employees reach age 55, and have 10 years of participation in the plan, the company must either give them the option of diversifying 25 per cent of their account balances among at least three other investment alternatives, or simply pay the amount out to the employees. At age 60, employees can have 50 per cent diversified or distributed to them.

When employees retire, die, or are disabled, the company must distribute their vested shares to them not later than the last day of the

plan year following the year of their departure. For employees leaving before reaching retirement age, distribution must begin not later than the last day of the sixth plan year following their year of separation from service. Payments can be in substantially equal instalments out of the trust over five years, or in a lump sum. In the instalment method, a company normally pays out a portion of the stock from the trust each year. The value of that stock may go up or down over that time, of course. In a lump sum distribution, the company buys the shares at their current value, but can make the purchase in instalments over five years, as long as it provides adequate security and reasonable interest. ESOP shares must be valued at least annually by an independent outside appraiser unless the shares are publicly traded.

Closely-held companies and some thinly-traded public companies must repurchase the shares from departing employees at their fair market value, as determined by an independent appraiser. This so-called 'put-option' can be exercised by the employee in one of two 60-day periods, one starting when the employee receives the distribution and the second period one year after that. The employee can choose which one to use. This obligation should be considered at the outset of the ESOP and factored into the company's ability to repay the loan.

Voting Rules

Voting is one of the most controversial and least understood of ESOP issues. The trustee of the ESOP actually votes the ESOP shares. The question is 'who directs the trustee?' The trustee can make the decision independently, although that is very rare. Alternatively, management or the ESOP administrative committee can direct the trustee, or the trustee can follow employee directions.

In private companies, employees must be able to direct the trustee as to the voting of shares *allocated* to their accounts on several key issues, including closing, sale, liquidation, recapitalization, and other issues having to do with the basic structure of the company. They do not, however, have to be able to vote for the board of directors or other typical corporate governance issues, although companies can voluntarily provide these rights. Instead, the plan trustee votes the shares, usually at the direction of management. In listed corporations, employees must be able to vote on all issues.

Voting rights are more complicated than they seem. First, voting is not the same as tendering shares. So, while employees may be required to vote on all issues, they may have no say about whether shares are tendered. In public companies, this is a major issue. Almost all public companies now write their plans to give employees the right to direct the tendering, as well as voting, of their shares, for reasons to be explained in the following section.

Second, employees are not required to be able to vote on unallocated shares. In a leveraged ESOP, this means that for the first several years of the loan, the trustee can vote the majority of the shares, if that is what the company wants to do. The company could provide that unallocated shares, as well as any allocated shares for which the trustee has not received instructions, should be voted or tendered in proportion to the allocated shares for which directions were received.

What this all means is that for almost all ESOP companies, governance is not really an issue unless they want it to be. If companies want employees to have only the most limited role in corporate governance, they can; if they want to go beyond this, they can as well. In practice, companies that do provide employees with a substantial governance role find that it does not result in dramatic changes in the way the company is run.

Valuation

In closely-held companies and some thinly-traded listed companies, all ESOP transactions must be based on a current appraisal by an independent, outside valuation expert. The valuation process assesses how much a willing buyer would pay a willing seller for the business. This calculation is performed by looking at various ratios, such as price-to-earnings, at discounted future cash flow and earnings, at asset value, and at comparable companies, among other things. It is then adjusted to reflect whether the sale is for control (owning a controlling interest in a business is worth more than owning a minority interest, even on a per-share basis) and marketability (shares of public companies are worth more than closely-held firms because they are easier to buy and sell). ESOP company shares have better marketability than non-ESOP firms, however, because the ESOP provides a market, albeit not as active a one as a stock exchange.

Tax Benefits to the Selling Shareholder

One of the major benefits of an ESOP for closely-held firms is Section 1042 of the Internal Revenue Code. Under it, a seller to an ESOP may be able to qualify for a deferral of taxation of the gain made from the sale. Several requirements apply, the most significant of which are:

1. The seller must have held the stock for three years prior to the sale.
2. The stock must not have been acquired through options or other employee benefit plans.
3. The ESOP must own 30 per cent or more of the value of the shares in the company and must continue to hold this amount for three years unless the company is sold. Shares repurchased by the company from departing employees do not count. Stock sold in a transaction that brings the ESOP to 30 per cent of the total shares qualifies for the deferral treatment.
4. Shares qualifying for the deferral can neither be allocated to accounts of children, brothers or sisters, spouses, or parents of the selling shareholder(s), nor to other 25 per cent shareholders.
5. The company must be a 'C' corporation

If these rules are met, the seller (or sellers) can take the proceeds from the sale and reinvest them in 'qualified replacement securities' within 12 months after the sale or three months before and defer any capital gains tax until these new investments are sold. Qualifying replacement securities are defined essentially as stocks, bonds, warrants or debentures of domestic corporations receiving not more than 25 per cent of their income from passive investment. Mutual funds and real estate trusts do not qualify. If the replacement securities are held until death, they are subject to a step-up in basis, so that capital gains taxes would never be paid.

Increasingly, lenders are asking for replacement securities as part or all of the collateral for an ESOP loan. This strategy may be beneficial to sellers selling only part of their holdings because it frees the corporation to use its assets for other borrowing and could enhance the future value of the company.

It is also important to note that people taking advantage of the '1042' treatment cannot have stock reallocated to their accounts from these

sales if they remain employees. Other 25 per cent shareholders and close relatives of the seller also cannot receive allocations from these sales.

Financial Issues for Employees

When an employee receives a distribution from the plan, it is taxable unless rolled over into an IRA or other qualified plan. Otherwise, the amounts contributed by the employer are taxable as ordinary income, while any appreciation on the shares is taxable as capital gains. In addition, if the employee receives the distribution before normal retirement age and does not roll over the funds, a 10 per cent excise tax is added.

While the stock is in the plan, however, it is not taxable to employees. It is rare, moreover, for employees to give up wages to participate in an ESOP or to purchase stock directly through a plan (this raises difficult securities law issues for closely-held firms). Most ESOPs either are in addition to existing benefit plans or replace other defined contribution plans, usually at a higher level of pay.

Determining ESOP Feasibility

Several factors are involved in determining if a company is a good ESOP candidate:

- *Is the cost reasonable?* ESOPs typically cost US$ 20,000 and up, depending on the complexity and the size of the transaction. This is usually much cheaper than other ways to sell a business, but more expensive than other benefit plans.
- *Is the payroll large enough?* Limitations on how much can be contributed to a plan may make it impractical to use to buy out a major owner or finance a large transaction. For instance, a US$ 5 million purchase would not be feasible if the company has US$ 500,000 of eligible payroll because annual contributions could be no larger than US$ 125,000 (25 per cent) per year, not enough to repay a loan for that amount.

  It may be possible to go over this amount somewhat, however, through the use of deductible dividends. Companies can also set up the loan so that the bank loans to the company on one term (say seven years) and the company re-loans the money to the ESOP on

another (say 12 years), meaning that the principal payments are stretched out longer and the percentage of pay required each year is smaller.

- *Can the company afford the contributions?* Many ESOPs are used to buy existing shares, a non-productive expense. Companies need to assess whether they have the available earnings for this.
- *Is management comfortable with the idea of employees as owners?* While employees do not have to run the company, they will want more information and more say. Unless they are treated this way, research shows, they are likely to be demotivated by ownership.

Repurchase Considerations

One of the major issues ESOPs must face is the obligation that companies sponsoring them provide for the repurchase of shares of departing employees. The legal obligation rests with the company, although it can fund this by making tax-deductible contributions to the ESOP, which the ESOP uses to repurchase the shares. Most companies either do this or buy the shares back themselves and then re-contribute them to the ESOP (and take a tax deduction for that). Either way, shares continue to circulate in the plan, providing stock for new employees. Some companies, however, buy back the shares and retire them or have other people buy them (a manager, for instance).

The repurchase obligation may seem like a reason not to do an ESOP ('you mean we have to buy back the shares continually,' people often ask). In fact, all closely-held companies have a 100 per cent repurchase obligation at all times. An ESOP simply puts it on a schedule and allows the company to do it in pre-tax dollars. Nonetheless, repurchase can be a major problem if companies do not anticipate and plan for it. A careful repurchase study should be done periodically to help manage this process.

ESOPs in Subchapter S Companies

ESOPs can now own stock in Subchapter S corporations. While these ESOPs operate under most of the same rules as in a C corporation, there are important differences:

- First, interest payments on ESOP loans count towards the contribution limits (they normally do not in C companies). Dividends paid on ESOP shares are also not deductible.

- Second, and most importantly, sellers to an ESOP in an S corporation do not qualify for the tax-deferred rollover treatment.
- Third, for plan years prior to 1 January 2002, the annual limit on contributions is 15 per cent of pay per year, although the ESOP could be combined with a money-purchase plan to get to the 25 per cent limit.

On the other hand, the ESOP is unique among S corporation owners in that it does not have to pay federal income tax on any profits attributable to it (state rules will vary). This can make an ESOP very attractive in some cases. It also makes converting to an S corporation very appealing when a C corporation ESOP owns a high percentage of the company's stock.

For owners who want to use an ESOP to provide a market for their shares, generally it will make sense to convert to C status before setting up an ESOP. Where selling shares is not a priority, or where the seller either does not have substantial capital gains taxes due on the sale or has other reasons to prefer staying an S corporation, an S ESOP can provide significant tax benefits. However, owners must keep in mind that any distributions paid to owners must be paid pro rata to the ESOP. The ESOP can use these distributions to purchase additional shares, to build up cash for future repurchases of employee shares, or just to add to employee accounts.

While the S corporation rules make an ESOP very attractive, legislation passed in 2001 makes it clear that these rules are not meant to be abused by companies seeking to create the ESOP primarily to benefit a few people. For instance, some accountants were promoting plans in which a company would set up an S corporation management company owned by just a few people, which would manage a large C corporation. The profits would flow through the S corporation, which would then not be taxed.

The rules Congress enacted are complicated, but boil down to two essential points. First, people who own more than 10 per cent of the allocated shares in the ESOP, or who own 20 per cent counting their family members, are considered 'disqualified' persons. The ESOP ownership is defined to include synthetic equity as well, such as options. Second, if these disqualified people together own more than 50 per cent of the company's shares (counting their synthetic equity), then they cannot get allocations in the ESOP without extraordinary tax penalties. Congress also directed the IRS to apply this onerous tax treatment to any plan it

deems to be substantially for the purpose of evading taxes rather than providing employee benefits.

Steps in Setting-Up an ESOP

If you have decided an ESOP is worth investigating, there are several steps to take to implement a plan. At each point, you may decide you have gone far enough, and that an ESOP is not right for you.

1. *Determine if other owners are amenable.* This may seem like an obvious issue, but sometimes people take several of the steps listed here before finding out if the existing owners are willing to sell. Employees should not start organizing a buyout unless they have some reason to think the parent firm is willing to sell (it may not be, for instance, if its goal is to reduce total output of a product it makes at other locations). Or there may be other owners of a private firm who will never agree to an ESOP, even if it seems appealing to the principal owners. They could cause a good deal of trouble down the road.

2. *Conduct a feasibility study.* This may be a full-blown analysis by an outside consultant, replete with market surveys, management interviews and detailed financial projections, or it may simply be a careful business plan performed in-house. Generally, full-scale feasibility studies are only needed where there is some doubt about the ESOP's ability to repay the loan. Any analysis, however, must look at several items. First, it must assess just how much extra cash flow the company has available to devote to the ESOP, and whether this is adequate for the purposes for which the ESOP is intended. Second, it must determine if the company has adequate payroll for ESOP participants to make the ESOP contributions deductible. Remember to include the effect of other benefit plans that will be maintained in these calculations. Third, estimates must be made of what the repurchase liability will be and how the company will handle it.

3. *Conduct a valuation.* The feasibility study will rely on rough estimates of the value of the stock for the purpose of calculating the adequacy of cash and payroll. In public companies, of course, these estimates will be fairly accurate because they can be based on past price

performance. In private companies, they will be more speculative. The next step for private firms (and some public companies as well) is a valuation. A company may want to have a preliminary valuation done first to see if the range of values produced is acceptable. A full valuation would follow if it is.

Doing a valuation before implementing a plan is a critical step. If the value is too low, sellers may not be willing to sell. Or, the price of the shares may be too high for the company to afford. The valuation consultant will look at a variety of factors, including cash flow, profits, market conditions, assets, comparable company values, goodwill and overall economic factors. A discount on value may be taken if the ESOP is buying less than 5 per cent of the shares. The process is described in more detail later in this book.

4. *Hire an ESOP attorney.* If these first three steps prove positive, the plan can now be drafted and submitted to the IRS. You should carefully evaluate your options and tell your attorney just how you want the ESOP to be set up. This could save you a considerable amount of money in consultation time. The IRS may take many months to issue you a 'letter of determination' on your plan, but you can go ahead and start making contributions before then. If the IRS rules unfavourably, which rarely happens, normally you just need to amend your plan.

5. *Obtain funding for the plan.* There are several potential sources of funding. Obviously, the ESOP can borrow money. Banks are generally receptive to ESOP loans, but, as with any loan, it makes sense to shop around. Sellers or other private parties can also make loans, but do not qualify for the interest income exclusion. Larger ESOP transactions can also tap the bond market or borrow from insurance companies. Another source of funding is ongoing company contributions, outside of loan repayments. While ESOPs must, by law, invest primarily in employer securities, most ESOP experts believe they can temporarily invest primarily in other assets while building up a fund to buy out an owner. A third source is existing benefit plans. Pension plans are not a practical source of funding, but profit-sharing plans are sometimes used. Profit-sharing assets are simply transferred in part, or entirely, into an ESOP. Many ESOP companies do this, but it must be done

cautiously. If employees are given no choice in the switch, trustees of the plan must be able to demonstrate that the investment in company stock was prudent; if they are given a choice, there could be a securities law issue. Finally, employees can contribute to the plan, most commonly by wage or benefit concessions. Most ESOPs do not require these, but they are necessary in some cases. Clearly, this is an issue that must be handled very carefully.

6. *Establish a process to operate the plan.* A trustee must be chosen to oversee the plan. In most private companies, this will be someone from inside the firm, but some private and most public companies hire an outside trustee. A separate section later in this publication addresses the pros and cons on this issue. An ESOP committee will direct the trustee. In most companies, this is made up of management people, but many ESOP firms allow at least some non-management representation. Finally, and most important, a process must be established to communicate how the plan works to employees and to get them more involved as owners. These issues are also addressed in more detail later in this publication.

Broad-Based Stock Options

ESOPs each are 'qualified' plans, meaning they must meet federal rules to assure that participation in them does not excessively favour more highly-compensated people. Not every company wants to abide by these rules, nor does every company want the additional tax benefits they can offer. Moreover, some companies believe ownership means more if employees have to put something up to get it. Some growing companies find that contributing or purchasing existing stock is too much of a strain on either their capital structure or their finances, or both. They would prefer to give employees a right to future ownership. Many growing private companies do not pay taxes; so the tax benefits of an ESOP may not be attractive, making the greater flexibility of options more appealing. Finally, options have very favourable accounting treatment, something of particular significance to public companies.

For companies persuaded by one or more of these arguments, broad stock options make an attractive choice. The concept of granting stock options to most or all employees was almost unheard of as late as the end of the 1980s, with the exception of some start-up high growth firms.

Microsoft, for instance, has created over 10,000 millionaires by giving stock options broadly to employees. Now, an estimated 15 per cent to 20 per cent of all public companies, such as PepsiCo, Starbucks, Bank of America/NationsBank, Walgreens, Whole Foods and Whirlpool, are providing options to most or all employees. As these examples indicate, these firms are not confined to high-tech fields; the trend cuts across all kinds of businesses. At the same time, a growing percentage of high-tech firms are giving stock options broadly. In a 1992 survey of electronics firms by ShareData, a San Jose stock options plan administrator, 30 per cent of the respondents said they gave stock options to most or all full-time employees; the percentage grew to 54 per cent by the time the survey was repeated two years later. The survey indicated that the smaller the company, the more likely it was to include most employees. A study by Joseph Blasi at Rutgers in 2000 found that 97 of the top 100 e-commerce companies granted options to most or all employees.

Stock Option Procedures in the US

A stock option gives an employee the right to buy shares at a price fixed today (usually the market price, but sometimes lower) for a defined number of years into the future. The options might be granted on a percentage of pay basis, a merit formula, an equal basis, or any other formula the company chooses. Most broad-based plans provide grants regularly (every one to three years), either on the basis of the passage of time (every year, for instance) or an event (promotion, meeting certain corporate or group targets, or a performance appraisal, for instance). The options are typically subject to three- to five-year vesting, meaning that if someone is 20 per cent vested, he or she can only exercise 20 per cent of the options. An employee can usually exercise vested options at any time. Most options have a ten-year life, meaning the employee can choose to buy the shares at the grant price at any time they are vested for up to 10 years. The difference between the grant price and the exercise price is called the 'spread'.

Most public companies offer a 'cashless exercise' alternative in which the employee exercises the option, and the company gives the employee an amount of cash equal to the difference between the grant price and the exercise price, minus any taxes that are due.

Options can also be exercised with cash, although employees must have enough to pay for the shares and taxes (if any), by exchanging

existing shares employee own, or by selling just enough of the shares acquired through the options to pay the costs and taxes, then keeping the remaining shares.

In closely-held firms, employees usually have to wait until the company is sold or goes public to sell their shares, although some companies have arrangements to purchase the shares themselves or help facilitate buying and selling between employees. When an employee exercises an option, however, this constitutes an investment decision subject to securities laws. At a minimum, these require 'anti-fraud financial disclosure statements' and, in some cases, will require securities registration as well. For this reason, broad stock options are used primarily in closely-held firms when the intention is to sell or go public.

For public companies, broad options can impose a substantial dilution for other shareholders as new shares are issued to satisfy option holders Alternatively, if the company buys shares to satisfy option exercises, there is a significant cash cost. Companies sponsoring these programmes, however, contend that shareholders should be satisfied because the costs will only exist if their share price has increased. Management of these companies believes the broad options more than pay for themselves in terms of increased corporate value.

Non-Qualified Options

Most broad-based plans provide employees with non-qualified stock options, options that do not qualify for any special tax consideration. Anyone, employees or non-employees, can be given a non-qualified option on any basis the company chooses. When a non-qualified option is exercised, the employee must pay ordinary income tax on the 'spread' between the grant and exercise price; the company can deduct that amount.

For example, say that Chip Salter, a mechanic at PepsiCo's Frito-Lay division, makes US\$ 20,000 per year. Under PepsiCo's plan, Chip gets options worth 10 per cent of pay each year, which vest at 20 per cent per year over five years. So Chip gets to buy US\$ 2,000 worth of PepsiCo stock at current market prices for 10 years. We shall assume that they were trading at US\$ 40 when granted, so Chip has options on 50 shares (US\$ $40 \times 50 =$ US\$ 2,000). Assume he holds onto these options for the full 10 years. At the end of 10 years, assume PepsiCo shares are now worth US\$ 100. Chip can buy 50 shares worth US\$ 100 each for just US\$ 40,

making a profit of US\$ 60 per share, or US\$ 3,000, on paper. To buy the shares at US\$ 40 each, he can borrow the money or use cash. If he has existing shares, he can exchange those for the new shares he is purchasing (US\$ 200 in shares would buy five shares at US\$ 40 each, for instance). However, he acquires the shares, he must pay ordinary income tax on US\$ 3,000 in gain. PepsiCo gets a corresponding tax deduction. Alternatively, and most commonly, he can have PepsiCo buy the shares for him, pay his tax, and give him what is left, probably about US\$ 2,000.

Incentive Stock Options

With an incentive stock option (ISO), a company grants the employee an option to purchase stock at some time in the future at a specified price. With an ISO, there are restrictions on how the option is to be structured and when the option stock can be transferred. The employee does not recognize ordinary income at option grant or exercise (although the spread between the option price and the option stock's fair market value may be taxed under the alternative minimum tax purposes), and the company cannot deduct the related compensation expense. The employee is taxed only upon the *disposition* of the option stock. The gain is all capital gain for a qualifying disposition. For a disqualifying disposition (that is, one not meeting the rules specified here for a qualifying disposition), the employee will recognize ordinary income.

For a stock option to qualify as an ISO [and thus receive special tax treatment under Code Section 421(a)], it must meet the requirements of Section 422 of the Code when granted and at all times beginning from the grant until its exercise. The requirements include:

- The option may be granted only to an employee (grants to non-employee directors or independent contractors are not permitted) who must exercise the option while an employee, or no later than three months after termination of employment (unless the option is disabled, in which case this three-month period is extended to one year).
- The option must be granted under a written plan document specifying the total number of shares that may be issued and the employees who are eligible to receive the options. The plan must be approved by the stockholders within 12 months before or after plan adoption.

- Each option must be granted under an ISO agreement, which must be written and must list the restrictions placed on exercising the ISO. Each option must set forth an offer to sell the stock at the option price and the period of time during which the option will remain open.
- The option must be granted within 10 years of the earlier of adoption or shareholder approval, and the option must be exercisable only within 10 years of grant.
- The option exercise price must equal or exceed the fair market value of the underlying stock at the time of grant.
- The employee must not, at the time of the grant, own stock representing more than 10 per cent of the voting power of all stock outstanding, unless the option exercise price is at least 110 per cent of the fair market value and the option is not exercisable more than five years from the time of the grant.
- The ISO agreement must specifically state that the ISO cannot be transferred by the option holder other than by will or by the laws of descent and that the option cannot be exercised by anyone other than the option holder.
- The aggregate fair market value (determined as of the grant date) of stock bought by exercising ISOs that are exercisable for the first time cannot exceed US$ 100,000 in a calendar year. To the extent it does, Code Section 422(d) provides that such options are treated as non-qualified options.

Tax Implications of ISOs for Employees

An employee receiving an ISO realizes no income upon its receipt or exercise. Instead, the employee is taxed upon disposition of the stock acquired pursuant to the ISO. A disposition of ISO stock generally refers to any sale, exchange, gift or transfer of legal title of stock. The tax treatment of the disposition of option exercise stock depends upon whether the stock was disposed of in a qualifying disposition within the statutory holding period for ISO stock. The ISO statutory holding period is the later of two years from the date of the granting of the ISO to the employee or one year from the date that the shares were transferred to the employee upon exercise. If the ISO is exercised more than three months after the employee has left the employment of the company

granting the option, however, favourable tax treatment is not available. Upon a qualifying disposition, the employee recognizes capital gain, measured by the difference between the option exercise price and the sale proceeds. However, the gains on an incentive option are subject to Alternative Minimum Tax treatment.

If disposition occurs within two years of the employee's receipt of the option or within one year of receipt of the stock, the employee recognizes at the time of the disposition ordinary income measured by the difference between the option exercise price and the fair market value of the stock at the time of option exercise (the 'bargain purchase element'), or the exercise price and the sale price, if the difference is lower. If shares are held after a disqualifying disposition (as could be the case if they were transferred), then any additional gain or loss would be treated as a capital gain or loss.

An employer granting an ISO is not entitled to a deduction with respect to the issuance of the option or its exercise. If the employee causes the option to be disqualified (by disposing of his or her stock prematurely prior to the end of the requisite holding period), however, the employer usually may take a deduction for that amount recognized by the employee as ordinary income in the same year as the employee recognizes the income. In addition, the employer that granted the ISO does not have any withholding obligation with regard to the ordinary income an employee recognizes upon a disqualifying disposition (the Internal Revenue Service [IRS] may change this position).

401(k) Plans

401(k) plans allow employees to defer part of their pay on a pre-tax basis into an investment fund set up by the company. The company usually offers at least four alternative investment vehicles. Because the law requires that participation in the plans not be too heavily skewed towards more highly-paid people, companies generally offer a partial match to encourage broad participation in these voluntary plans. This match can be in any investment vehicle the company chooses, including company stock. There is a limit of 25 per cent of taxable pay that the company can contribute to the plan.

While ESOPs have received the lion's share of attention as the vehicle of choice for employee ownership, 401(k) plans actually now hold almost

as much company stock as ESOPs do. Most of the 'own company stock' investments in 401(k) plans are in larger companies. In companies with fewer than 200 employees, only 2 per cent is in company stock; it is 8 per cent in companies under 1,000 employees. This increases to 17 per cent for companies with 1,000 to 5,000 people and 32.4 per cent for companies over 5,000. These data also reveal how much of 401(k) assets are in larger companies in general. In companies with over 1,000 employees, a Hewitt Associates study found that 25 per cent of employee contributions to 401(k) plans are in company stock, while about 70 per cent of employer matches are in the form of company stock. Collectively, about 18 per cent of 401(k) assets are in company stock, which, as of 2001, would be worth about US$ 250 billion.

While these numbers add up to impressive absolute amounts, employees rarely own more than 10 per cent of a company through a 401(k) plan. Moreover, research at the National Centre for Employee Ownership has found few companies that provide stock in this way think of themselves as 'employee ownership companies'. Instead, companies simply see this as a convenient or financially favourable investment option.

The continued growth of 401(k) plans suggests, however, that they must be taken seriously as employee ownership vehicles. Over the next decade, if current trends continue, employees could often own 20 per cent or more of many large, public companies. While it is only speculation, we think that at some percentage of ownership, corporate management may start realizing that it would be to its advantage to start thinking of itself as a substantially employee owned company, just as employees will start realizing how much their retirement benefits depend on company performance.

There are several factors that favour the use of a 401(k) plan as a vehicle for employee ownership in public firms. From the company's perspective, its own stock may be one of the most cost-effective means of matching employee contributions. If there are existing treasury shares or the company prints new shares, contributing them to the 401(k) plan may impose no immediate cash cost on the company; in fact, it would provide a tax deduction. Other shareholders would suffer a dilution, of course. If the company has to buy shares to fund the match, at least the dollars being used are used to invest in itself rather than other investments. From the employee standpoint, company stock is the investment the employee

knows best and so may be attractive to people who either do not want to spend the time to learn about alternatives or have a strong belief in their own company. Balanced against these advantages, of course, must be an appreciation on both the part of the employee and the company that a failure to diversify a retirement portfolio is very risky.

For closely-held companies, 401(k) plans are less appealing, although very appropriate in some cases. If employees are given an option to buy company stock, this can often trigger securities law issues most private firms want to avoid. Employer matches make more sense, but require the company to either dilute ownership or reacquire shares from selling shareholders. In many closely-held businesses, the first may not be desirable for control reasons and the second because there may not be sellers. Moreover, the 401(k) approach does not provide the 'rollover' tax benefit that selling to an ESOP does, and the maximum amount that can be contributed is a function of how much employees put into savings. That will limit how much an employer can actually buy from a seller through a 401(k) plan to a fraction of what the ESOP can buy.

401(k) contributions cannot be leveraged either; so a sale of company stock would have to proceed slowly in annual increments. For example, if a company can get 60 per cent of its workforce to participate in a 401(k) plan, and they put up 5 per cent of pay (a reasonable but fairly high amount in practice), the company might match this on a dollar-for-dollar basis, but this would still only come to perhaps 4 per cent of payroll (assuming 401(k) participants tend to be higher paid than non-participants).

Despite these limitations, 401(k) plans, and their new, simpler cousins, SIMPLE plans [plans for employers under 100 employees that are much like 401(k) plans but with stricter rules and easier administration], are attractive as ownership vehicles in cases where a company simply wants employees to become owners, but has no need to buy out owners or use the borrowing features of an ESOP. A company can simply match employee deferrals with company stock or make a straight percentage of pay contribution to all employees eligible to be in the plan in the form of company stock.

401(k) plans and ESOPs can also be combined, with the ESOP contribution being used as the 401(k) match. This can work on either a non-leveraged or leveraged basis. In the non-leveraged case, the company simply characterizes its match as an ESOP. That adds some set-up and

administrative costs, but allows the company to reap the additional tax benefits of an ESOP, such as the 1042 rollover. In a leveraged case, the company estimates how much it will need to match employee contributions each year, then borrows an amount of money such that the loan repayment will be close to that amount. If it is not as much as the promised matching amount, the company can either just define that as its match anyway, make up the difference with additional shares or cash (if the loan payment is lower), or pay the loan faster. If the amount is larger, the employees get a windfall. Combination plans must meet complex rules for testing to determine if they discriminate too heavily in favour of more highly-paid people.

Employee Stock Purchase Plans

Finally, million of employees become owners in their companies through employee stock purchase plans (ESPPs). Many of these plans are organized under Section 423 of the tax code and thus are often called '423' plans. Other ESPPs are 'non-qualified' plans, meaning they do not have to meet the special rules of Section 423 and do not get any of the special tax treatment. Most of these plans, however, are very similar in structure.

Under Section 423, companies must allow all employees to participate, but can exclude those with less than two years' tenure, part-time employees, and highly compensated employees. All employees must have the same rights and privileges under the plan, although companies can allow purchase limits to vary with relative compensation (most do not do this, however). Plans can limit how much employees can buy, and the law limits it to US$ 25,000 per year.

423 plans, like all ESPPs, operate by allowing employees to have deductions taken out of their pay on an after-tax basis. These deductions accumulate over an 'offering period'. At a specified time or times employees can choose to use these accumulated deductions to purchase shares or they can get the money back. Plans can offer discounts of up to 15 per cent on the price of the stock. Most plans allow this discount to be taken based on *either* the price at the beginning or end of the offering period (the so-called 'look-back feature'). The offering period can last up to five years if the price employees pay for their stock is based on the share price at the end of the period or 27 months if it can be determined at an earlier point.

Plan design can vary in a number of ways. For instance, a company might allow employees a 15 per cent discount on the price at the end of the offering period, but no discount if they buy shares based on the price at the beginning of the period. Some companies offer employees interim opportunities to buy shares during the offering period. Others provide smaller discounts. Offering periods also vary in length. NCEO studies, however, show that the large majority of plans have a look-back feature and provide 15 per cent discounts off the share price at the beginning or end of the offering period. Most of the plans have a 12-month offering period, with six months the next most common.

In a typical plan, then, our friend Chip Salter might start participating in an ESPP plan when the shares are worth US\$ 40. He puts aside US\$ 20 per week for 52 pay periods, accumulating US\$ 1,040. The offering period ends on the 52nd week and Chip decides to buy shares. The current price is US\$ 45. Chip will obviously choose to buy shares at 15 per cent off the price at the beginning of the offering period, meaning he can purchase shares at US\$ 34. For his US\$ 34, he gets shares now worth US\$ 45. If the share price had dropped to US\$ 38 at the end of the offering period, Chip could buy shares instead at 15 per cent off US\$ 38.

The tax treatment of a 423 plan is similar to that of an incentive stock option. If Chip holds the shares for two years after grant and one year after exercise, he pays capital gains taxes when he actually sells the stock on all of the gain he has made except the 15 per cent discount (US\$ 6 per share in our example). If he sells the shares after meeting the holding rules at a price less than US\$ 40, he would pay ordinary income tax just on the difference between the purchase and sale price. The company gets no tax deduction, even on the 15 per cent discount.

If Chip does not meet these rules because he sells earlier, then he pays ordinary income tax on the entire difference between the purchase price (US\$ 34) and the exercise price (US\$ 45), plus long-term or short-term capital gains taxes on any increase in value over US\$ 45. The company gets a tax deduction for the spread between the purchase price and the exercise price (US\$ 11 per share, in this case).

Non-qualified ESPPs usually work much the same way, but there are no rules for how they must be structured and no special tax benefits. The employee would pay tax on the discount as ordinary income *at the time the stock is purchased* and would pay capital gains on any subsequent gain.

In our example, Chip would pay tax on US$ 11 per share at the time the shares were purchased. The company would receive a corresponding deduction.

ESPPs are found almost exclusively in public companies because the offering of stock to employees requires compliance with costly and complex securities laws. Closely-held companies can, and sometimes do, have these plans, however. Offerings of stock only to employees can qualify for an exemption from securities registration requirements at the federal level, although they will have to comply with anti-fraud disclosure rules and, possibly, state securities laws as well. If they do offer stock in a stock purchase plan, it is highly advisable they obtain at least an annual appraisal.

ESPPs are very popular in public companies as they offer a benefit to employees and additional capital to companies. Any dilution resulting from the issuance of new shares to satisfy the purchase requests, or from the company repurchasing outstanding shares and reselling them at a discount, is usually so small that shareholders do not object. Rates of participation vary widely, with the median levels around 30 per cent to 40 per cent of eligible employees. Because most employees do not commit large amounts to these plans, and many do not participate at all, ESPPs should generally be seen as an adjunct to other employee ownership plans, not a means in themselves to create an ownership culture.

Employee Ownership and Employee Motivation

During the early 1980s, the National Centre for Employee Ownership conducted an exhaustive investigation of how employees react to being owners. We surveyed over 3,500 employee owners in 45 companies. We looked at hundreds of factors in an effort to determine whether it mattered to employees that they had stock in their company, and if so, when.

The results were very clear. Employees did like being owners. The more shares they owned, the more committed they were to their company, the more satisfied they were with their jobs, and the less likely they were to leave. Naturally, some employees in some companies liked being owners more than others. Individual employee response to ownership was primarily a response to how much stock they got each year. After that, employees responded more favourably if they had ample opportunities to participate in decisions affecting their jobs, worked in companies whose

management really believed in the concept of ownership and not just the tax breaks, and were provided regular information about how the ownership plan operated.

By contrast, the size of the company, the line of business, demographic characteristics of the employees, seniority, job classification, presence or absence of voting rights or board membership, percentage of the company owned by employees (as opposed to the size of the annual contribution), and many other factors did not have any impact. Employees looked at the employee ownership plan and asked 'how much money will I get from this?' and 'am I really treated like an owner?' If they liked the answers to these questions, they liked being an owner.

Employee Ownership and Corporate Performance

In 2000, Douglas Kruse and Joseph Blasi of Rutgers University analyzed all the ESOPs set up between 1988 and 1994 for which data were available. They then matched these companies to comparable non-ESOP companies and looked at the sales and employment data for the paired companies for three years prior to a company setting up an ESOP to the period three years after. They found that when they indexed out for the performance of the competitor companies, the ESOP companies grew 2.3 per cent to 2.4 per cent faster after setting up their plan than would have been expected otherwise. That seemed to give strong evidence that ESOPs do make a significant and positive contribution to corporate performance.

Impressive as these findings were, however, they did not indicate what it was about employee ownership that caused the improved performance or whether the improved performance was accounted for by just a subset of ESOP companies with particular characteristics. Other research, however, suggests that it is the combination of employee ownership and employee involvement that really makes the difference.

Knowing the answer to whether employee ownership motivates employees seems to provide the answer to whether ownership improves corporate performance. Not so. In most companies, labour costs are under 30–40 per cent of total costs. Motivation on its own, presumably, makes employees work harder. We often ask managers just how much more work they think they could hope to get from more motivated employees, based on an eight-hour day. Fifteen minutes is a typical response. That comes

to just 3 per cent more time. Three per cent times even a high estimate of 40 per cent for labour costs results in just a 1.2 per cent savings, assuming everyone will be more motivated, which is, of course, far from true.

While a 1 per cent improvement can be a lot of money, it is not what distinguishes the really successful companies from the mediocre ones. The star performers are those that react to their environment in creative, innovative ways, providing better value to their customers than competitors. How is that achieved? Through processing information and acting on it intelligently. In most companies, information gathering is limited to a group of managers. The generation of ideas is similarly limited. So is decision-making. The assumption is that only these people have the talent, and perhaps the motivation, to carry out these tasks.

In fact, no one has more daily contact with customers than employees, at least in most companies. No one is closer to the day-to-day process of making the product or providing the service than the employees. And, employees often do have useful ideas they could share with management.

Thus, for a company to use employee ownership effectively, it needs to do more than motivate people to work harder at what, after all, may not be the most efficient or effective thing to do. Instead, it must enlist employee ideas and information to find the best ways to do the most important things. To do that, companies need to get employees involved. Managers should seek their opinions. Employee task forces, ad hoc and permanent, should be established to solve problems. Quality circles and employee involvement teams can be set up. Individual jobs can be enhanced and supervision limited. Suggestion systems can be implemented. This all may seem like common sense, and it is. It is not very common practice in most companies, however.

Data indicate that it is becoming common in employee ownership companies. In a 1987 General Accounting Office report, about one-third of all ESOP firms had some degree of employee participation. By 1993, a study of Ohio firms by the Northeast Ohio Employee Ownership Centre and Kent State University found that about 60 per cent of the companies now had active employee involvement programmes, such as autonomous work teams, total quality management, or similar programmes. The incidence of participation roughly doubled after the initiation of an ownership plan. These participative firms, the GAO reported, showed a

strong improvement in productivity when they combined their ESOPs with participative management practices.

In a study by the National Centre for Employee Ownership published in the September/October 1987 *Harvard Business Review*, we found that participative ESOP firms grew 8 per cent to 11 per cent faster with their plans than they would have without them. In both the NCEO and GAO studies, no other factors had any influence on the relationship between ownership and performance. Three other recent studies confirmed both the direction and magnitude of these findings. Only participation can translate the motivation of ownership into the reality of a fatter bottom line. Participation is not enough on its own, either, as hundreds of studies have shown. One reason is that few participation programmes last more than five years in conventional companies. By contrast, over the last decade (90s), we have not found a single ESOP company that has dropped its programme. The structure of participation varies from company to company, but basically boils down to employees forming groups to share information, generate ideas and make recommendations.

At United Airlines, for instance, employee task teams were formed soon after the employees purchased the company. Over the ensuing two years, the teams took apart every aspect of the business, making recommendations for often substantial changes. The teams were appointed to include a broad cross-section of employees, but anyone could volunteer to join one. The ideas helped generate hundreds of million of dollars in cost savings and new revenues. Ironically, when the teams completed their work, management backed away from the idea of participation, causing the airline some well-reported difficulties in the years that followed. The ESOP is now frozen and both most managers and employees feel that it was not a success; United Airlines recently declared bankruptcy and is trying to reorganize. United shows clearly that just setting up an ESOP, and even starting off in the right direction, is not enough. Companies must commit to a long-term ownership culture programme.

Stone Construction Equipment Company in Honoeye, NY is a good example. It set up an ESOP set up in the late 1970s was having little impact. Then the company hired a new president, Bob Fien, who started a participative management programme. Eventually, all employees were trained in 'just-in-time' management and organized into work cells that schedule and control their own work flow and have considerable input

into the design and organization of their jobs. Stone had been limping along and had developed a reputation for poor quality; by 1991, the company had made so much progress that *Industry Week* named it one of America's top 10 manufacturers.

At Springfield ReManufacturing in Springfield, Missouri, employee owners are taught to read detailed financial and production data. Meeting in work groups, they go over the numbers, then figure out ways to improve them. Employees are sometimes given 90-page financial statements to digest. Springfield's stock went from 10 cents a share when it started its ESOP in 1983 to US$ 21.00 in 1994. Employment increased over 500 per cent.

Other approaches include employee advisory committees to management, eliminating levels of supervision while giving non-management employees more authority, meetings between management and randomly selected groups of employees, suggestion boxes, and anything else companies can imagine to get people involved.

This 'high-involvement' management style has, of course, become conventional wisdom, if still unconventional practice, at many companies. Is ownership really essential to make it work? There are no conclusive data on this, but there is good reason to believe that ownership, if not essential, is at least highly desirable. First, ownership is a cumulative benefit. Each additional year, an employee has more and more at stake in how well the company performs. It is not unusual in mature plans for the appreciation in share value and employer contributions to add up to 30 per cent to 50 per cent or more of pay in a year. In profit sharing or gain sharing, both of which are paid periodically and almost always amount to a small portion of total compensation, the benefit always remains relatively minor. Second, ownership has a stronger emotive appeal. People may be very proud to say they are an owner; few would brag to friends that they are a profit-sharer. Finally, only ownership encourages people to think about all aspects of a business, not just short-term profits or some efficiency measure. This is especially important in companies moving towards open-book management systems.

Concluding Comments

The continued growth of employee ownership reflects, above all, a changing view of the role of employees in the workplace. To be sure,

for some time, companies have been saying that 'people are our most important resource'. This was little more than rhetoric, however, for all but a handful of companies. Investors, capital, technology and, above all, top management, were really seen as the keys to the company's future. Employees would be laid off or have their compensation limited before these other assets were harmed. Increasingly, however, companies are coming to the view that attracting and retaining good people at all levels, then giving them the authority to make more decisions about more things, is essential to being an effective competitor. In large part, this is a function of technology. The vast amounts of information, and the speed with which it can be processed, leaves companies with little choice but to get more people involved in more things. As people are asked to take more responsibility for the company, it simply makes sense for them to be rewarded accordingly.

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