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CHAPTER 13

Capital Disadvantage

*America's Failing Capital
Investment System*

Michael E. Porter

TO COMPETE EFFECTIVELY in international markets, a nation's businesses must continuously innovate and upgrade their competitive advantages. Innovation and upgrading come from sustained investment in physical as well as intangible assets—things like employee skills and supplier relationships. Today the changing nature of competition and the increasing pressure of globalization make investment the most critical determinant of competitive advantage.

Yet the U.S. system of allocating investment capital both within and across companies is failing. This puts American companies in a range of industries at a serious disadvantage in global competition and ultimately threatens the long-term growth of the U.S. economy.

These are the principal findings of a two-year research project sponsored by the Harvard Business School and the Council on Competitive-

This article draws heavily on the research and commentary of my colleagues on the project on Capital Choices, cosponsored by the Harvard Business School and the Council on Competitiveness. Rebecca Wayland's research assistance and insights have contributed importantly to this study.

The issues discussed in this article are the subject of a large body of literature, which is extensively referenced in the project papers. Among the more broadly based studies is Michael T. Jacobs, *Short-Term America* (Harvard Business School Press, 1991). Other valuable contributions include the report of the Institutional Investor Project at the Columbia University Center for Law and Economic Studies, *Institutional Investors and Capital Markets: 1991 Update*, and the Symposium on the Structure and Governance of Enterprise, *Journal of Financial Economics*, September 1990.

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ness, a project that included eighteen research papers by twenty-five academic experts. This article draws on those papers and my research to offer a comprehensive analysis of the causes and recommended cures for the U.S. investment problem.

Critics of U.S. business frequently blame recent competitive shortcomings on various issues: a short time horizon, ineffective corporate governance, or a high cost of capital. In fact, these issues are symptoms of a larger problem: the operation of the entire capital investment system. The system includes shareholders, lenders, investment managers, corporate directors, managers, and employees, all of whom make investment choices in a context determined by government regulations and prevailing management practices. The American system creates a divergence of interests among shareholders, corporations, and their managers that impedes the flow of capital to those corporate investments that offer the greatest payoffs. Just as significant, it fails to align the interests of individual investors and corporations with those of the economy and the nation as a whole.

The U.S. system for allocating investment capital has many strengths: efficiency, flexibility, responsiveness, and high rates of corporate profitability. It does not, however, direct capital effectively within the economy to those companies that can deploy it most productively and within companies to the most productive investment projects. As a result, many American companies invest too little, particularly in those intangible assets and capabilities required for competitiveness—R&D, employee training and skills development, information systems, organizational development, and supplier relations. At the same time, many other companies waste capital on investments that have limited financial or social rewards—for example unrelated acquisitions.

The problems in the U.S. system are largely self-created. Through a long series of regulatory and other choices with unintended consequences, changes have occurred in areas such as the pattern of corporate ownership, the way investment choices are made, and the nature of internal capital allocation processes within companies. At the same time, the nature of competition has changed, placing a premium on investment in increasingly complex and intangible forms—the kinds of investment most penalized by the U.S. system.

Finally, the American economy has become far more exposed to global competition, making investment even more important and bringing a cross-section of U.S. companies into contact with companies based in nations with significantly different capital allocation systems. It is this comparison between the U.S. system and other nations' systems that points up the real danger of continuing current practices.

The U.S. system first and foremost advances the goals of shareholders interested in near-term appreciation of their shares—even at the expense of the long-term performance of American companies. It is flexible, capable of rapidly shifting resources among sectors—even if this is not the path to innovation, dynamism, and improved productivity. It helps the United States prosper in some industries because of the high rewards it offers—even as it pressures others toward under- or overinvestment in differing ways.

The systemic nature of the problem also suggests the need to question much of what constitutes the American system of management: its emphasis on autonomy and decentralization, its process of financial control and investment decision making, its heavy use of incentive compensation systems. Failure to change the system will simply ensure the continued competitive decline of key sectors in the U.S. economy.

Yet our analysis of the U.S. investment capital allocation system also reveals how much potential for competitive strength exists in the United States. The United States possesses an enormous pool of investment capital. The problem lies in how this capital is allocated—at what rates and into what kinds of investments. One consideration is whether there is over- or underinvestment. A second is whether an investment is complemented by associated investments—that is, whether there are linkages among different forms of investments. For example, a physical asset such as a new factory may not reach its potential level of productivity unless the company makes parallel investments in intangible assets such as employee training and product redesign. A third consideration is whether private investments also create benefits for society through spillovers or externalities. For example, a company that invests in upgrading its employees and suppliers not only enhances its own competitiveness but also creates better trained workers and stronger suppliers that may allow it to pursue entirely new strategies in the future. Nations

that encourage appropriate investment across a wide variety of forms and create these social benefits can leverage their pool of capital to build a strong and competitive national economy.

Meaningful change will be difficult because the American investment problem is far more complex than the conventional wisdom suggests. Many proposals to solve America's investment problem focus on only one aspect of the system, and they ignore the critical connections that tie the system together. To work, reform must address all aspects of the American system, and address them all at once. Policymakers, institutional investors, and corporate managers must all play a role in creating systemwide change.

Evidence of an American Investment Problem

For more than a decade, anecdotal evidence from managers and academics has suggested that American companies have invested at a lower rate and with a shorter time horizon than German or Japanese competitors. There are a variety of measures of the comparative rates, patterns, and outcomes of U.S. investments and the behavior of U.S. investors that support and expand that earlier view. Among them are the following:

- The competitive position of important U.S. industries has declined relative to those of other nations, notably Japan and Germany.
- Aggregate investment in property, plant and equipment, and intangible assets, such as civilian R&D and corporate training, is lower in the United States than in Japan and Germany.
- Leading American companies in many manufacturing industries such as construction equipment, computers, and tires are out-invested by their Japanese counterparts.
- American companies appear to invest at a lower rate than both Japanese and German companies in nontraditional forms such as human resource development, relationships with suppliers, and startup losses to enter foreign markets.
- R&D portfolios of American companies include a smaller share of long-term projects than those of European and Japanese companies.

- Hurdle rates used by U.S. companies to evaluate investment projects appear to be higher than estimates of the cost of capital.
- U.S. CEOs believe their companies have shorter investment horizons than their international competitors and that market pressures have reduced long-term investment. Foreign CEOs agree.
- The average holding period of stocks has declined from more than seven years in 1960 to about two years today.
- Long-term growth has declined as an influence on U.S. stock prices.
- Many recent U.S. policy proposals such as government funding of specific industries, R&D consortia, and joint production ventures implicitly reflect a private investment problem.

These findings present a broadly consistent picture of lagging American investment. But interestingly, the research has turned up some important complexities that derail simplistic explanations of America's reduced investment levels and shorter time horizon. For example:

- The American investment problem varies by industry and even by company. A convincing explanation—and worthwhile remedies—must address these differences.
- The United States does well in funding emerging industries and high-risk startup companies that require investments of five years or more. How does a low-investing, short-horizon nation achieve such a performance?
- The average profitability of U.S. industry is higher than that in Japan and Germany, yet American shareholders have consistently achieved no better or lower returns than Japanese (and recently German) shareholders. There is thus no simple connection between average corporate returns on investment and long-term shareholder returns, as much conventional wisdom about shareholder value seems to suggest.
- U.S. industry has overinvested in some forms, such as acquisitions. How does this overinvestment square with lower average rates of

investment and underinvestment in crucial forms such as intangible assets?

- There is persuasive evidence that some American companies systematically overinvest—this is documented by studies of the gains achieved from takeovers. Why is it that some companies underinvest while other companies apparently invest too much?
- The United States has the most efficient capital markets of any nation and highly sophisticated investors. How can such efficient capital markets be guilty of producing apparently suboptimal investment behavior?
- The investment problem seems to be more significant today than it was several decades ago. What accounts for this worsening situation?

Explaining these paradoxes and the differences in investment behavior across industries, companies, and forms of investment is essential to gaining a complete understanding of the American investment problem.

The Determinants of Investment

The determinants of investment can be grouped into three broad categories: the macroeconomic environment; the allocation mechanisms by which capital moves from its holders to investment projects; and the conditions surrounding specific investment projects themselves (see Figure 13.1).

The macroeconomic environment establishes the context in which investment by all companies in a nation takes place. A stable and growing economy tends to encourage investment, reassuring investors that returns will persist over the long term. In the United States, high federal budget deficits, low national savings rates, sporadic and unpredictable changes in tax policy, and a consumption-oriented tax code have dampened public and private investment over the past two decades.

Capital allocation mechanisms determine how the available pool of capital in a nation is distributed among industries, companies, and forms

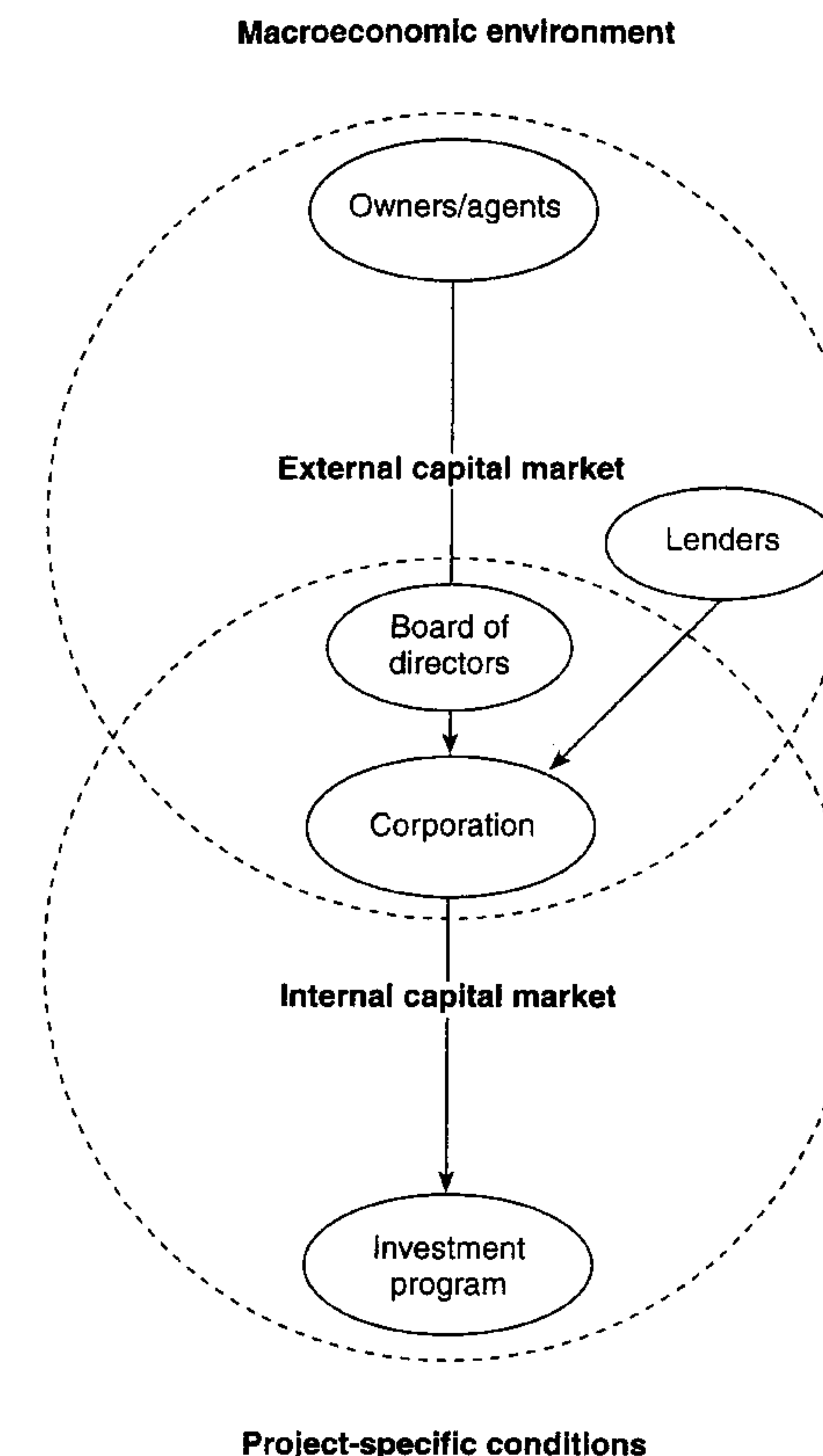


Figure 13.1 Determinants of Investment

of investment. They operate through two distinct but related markets: the external capital market through which holders of equity and debt provide capital to particular companies; and the internal capital market in which companies allocate the internally and externally generated funds at their disposal to particular investment programs. The Harvard Business School Council on Competitiveness research has focused on the operation and linkages between these dual markets and their effects on investment behavior.

Finally, some projects will yield greater payoffs than others, depending on the nature of the industry, the competitive position of the company,

and the nation or region in which the investment is made. As my previous research in *The Competitive Advantage of Nations* has indicated, the capacity to invest and innovate depends on the presence of specialized skills, technology, and infrastructure; sophisticated and demanding local customers; capable local suppliers; competitive local companies in closely related industries; and a local environment that encourages vigorous competition.

The External Capital Market

Investment behavior in the external capital market is shaped by four attributes (see Figure 13.2). First is the pattern of share ownership and agency relationships—the identity of the owners, the extent of their representation by agents such as pension funds and money managers, and the size of the stakes they hold in companies. Second are owners' and agents' goals, which define the outcomes they seek to achieve through their investment choices. Goals are affected by a number of factors, including whether owners can hold debt and equity jointly and whether there is a principal-agent relationship. Third are the approaches and types of information used by owners and agents to measure and value companies. Fourth are the ways in which owners and agents can influence management behavior in the companies whose shares they own. These four attributes of the external capital market are all interrelated, and over time they will become mutually consistent.

Although exceptions may exist, each nation is characterized by a consistent system of influences that affect the majority of investors and corporations. The predominant configuration of the external capital market in the United States is strikingly different from that in Japan and Germany.

In the case of the United States, the attributes combine to create a system distinguished by fluid capital: funds supplied by external capital providers move rapidly from company to company, usually based on perceptions of opportunities for near-term appreciation. In the United States, publicly traded companies increasingly rely on a transient ownership base comprised of institutional investors, such as pension funds, mutual funds, or other money managers, who act as agents for individual

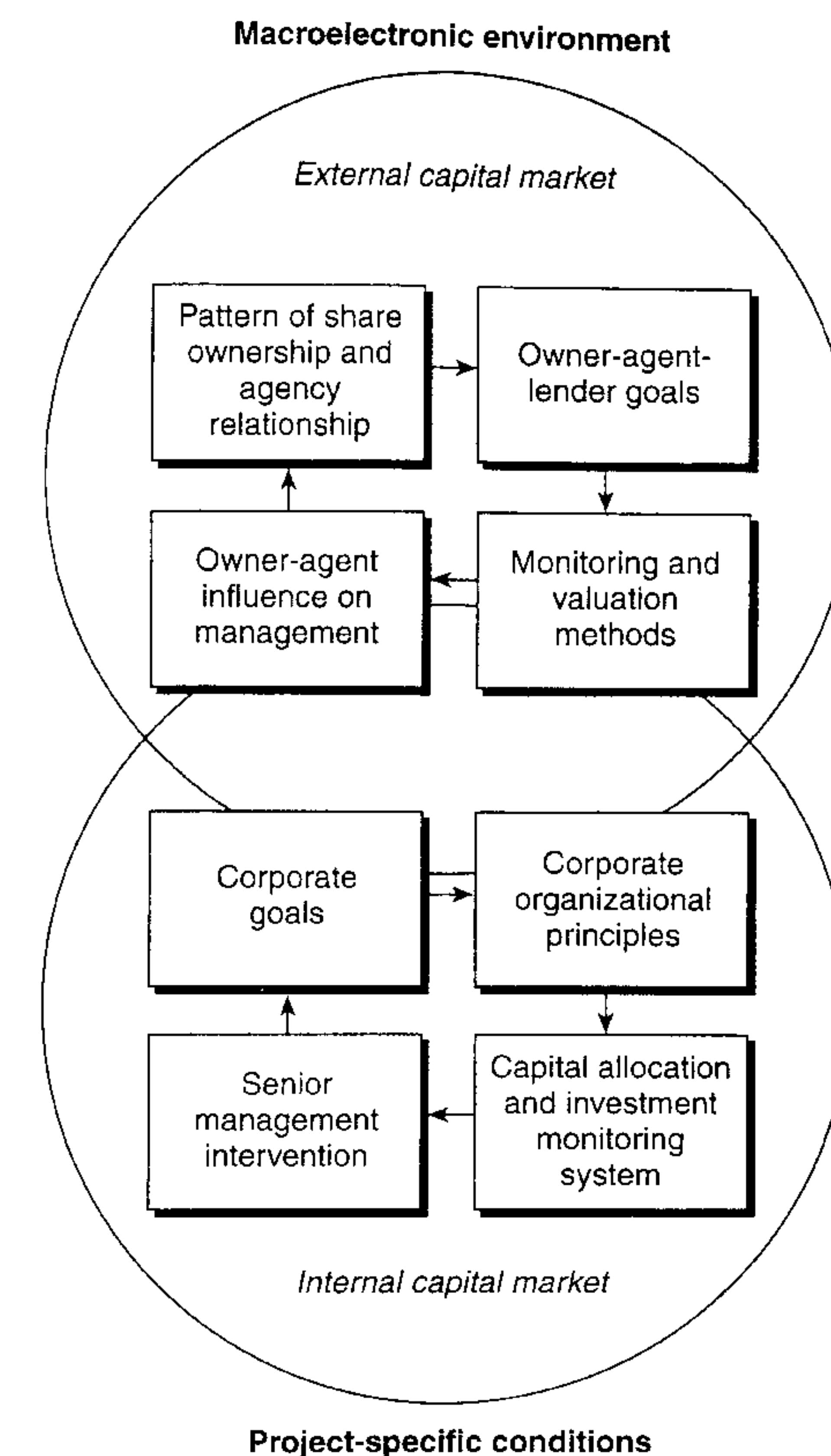


Figure 13.2 Determinants of Investment Behavior

investors. In 1950, such owners accounted for 8 percent of total equity; by 1990, the figure had reached 60 percent.

These institutional agents hold highly diversified portfolios with small stakes in many—perhaps hundreds—of companies. For example, in 1990 the California Public Employees Retirement System (CalPERS) reportedly held stock in more than 2,000 U.S. companies; its single largest holding was 0.71 percent of a company's equity. This fragmented pattern of share ownership is due in part to legal constraints on concentrated ownership, fiduciary requirements that encourage extensive diversification, and investors' strong desire for liquidity.

The goals of American institutional investors are purely financial and are focused on quarterly or annual appreciation of their investment portfolio compared with stock indices. Because managers are measured on their short-term performance, their investment goals understandably focus on the near-term appreciation of shares. Mutual funds and actively managed pension funds—which represent 80 percent of pension assets—hold their shares, on average, for only 1.9 years.

Because of their fragmented stakes in so many companies, short holding periods, and lack of access to proprietary information through disclosure or board membership, institutional investors tend to base their investment choices on limited information that is oriented toward predicting near-term stock price movements. The system drives them to focus on easily measurable company attributes, such as current earnings or patent approvals, as proxies of a company's value on which to base market timing choices. The value proxies used vary among different classes of companies and can lead to underinvestment in some industries or forms of investment while allowing overinvestment in others. Given the difficulty of outperforming the market with this approach, some institutions have moved to invest as much as 70 percent to 80 percent of their equity holdings in index funds. This method of investing capital involves no company-specific information at all.

Finally, in the American system, institutional agents do not sit on corporate boards, despite their large aggregate holdings. As a consequence, they have virtually no direct influence on management behavior. Indeed, with small stakes in the company and an average holding period of two years or less, institutional agents are not viewed by management as having a legitimate right to serious attention.

The Japanese and German systems are markedly different. Overall, Japan and Germany have systems defined by dedicated capital. The dominant owners are principals rather than agents; they hold significant stakes, rather than small, fragmented positions. These owners are virtually permanent; they seek long-term appreciation of their shares, which they hold in perpetuity. Unlike the U.S. system, in which the goals are driven solely by the financial transaction, the goals in these systems are driven by relationships. Suppliers and customers own stakes in each other, not to profit from the share ownership itself but to cement their business relationship. (See Figure 13.3.)

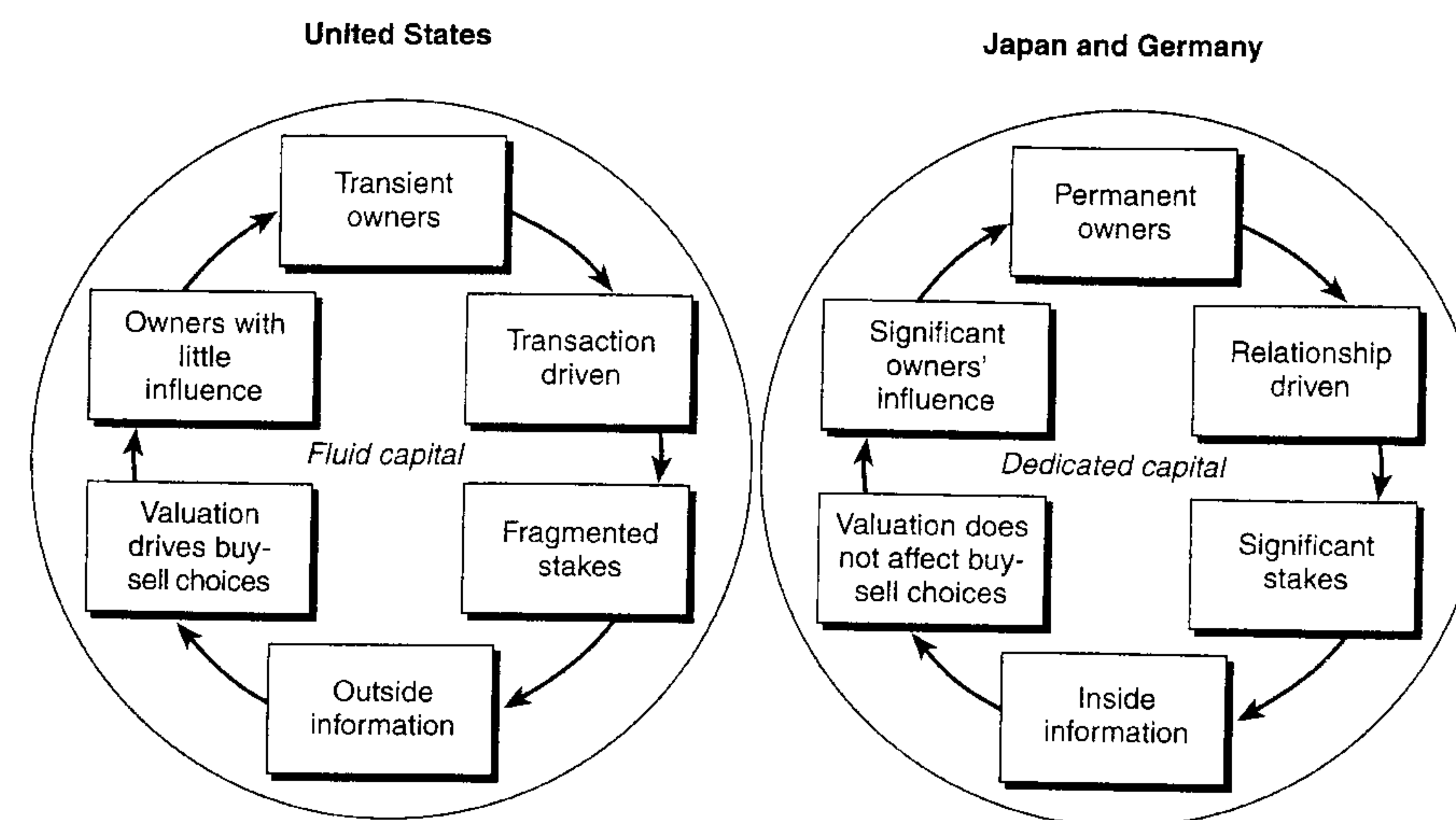


Figure 13.3 External Market Overview

The pattern of ownership and the goals of owners directly affect monitoring and valuation approaches. Since owners hold significant shares for long periods of time, they have both the incentive and the ability to engage in extensive and ongoing information gathering about the companies they own. And unlike the American system, principal Japanese and German owners are driven not by the need to make quick decisions on buying or selling stock for profit-taking but by the desire to assess the ongoing prospects of the company. They therefore command the respect of management, have access to inside information concerning the company, and, particularly in Germany, can exert considerable influence on management behavior.

Interestingly, while the permanent Japanese and German owners hold their company shares for long periods of time, the nonpermanent owners in these countries are prone to high-velocity stock churning, turning their shares over more frequently than owners do in the United States, and basing their investment decisions on even less information. While roughly 70 percent of Japanese stock is held for the long term, the remaining 30 percent is traded at such a rapid frequency that the average rate of trading in Japan is similar to the rate of trading in the United

States. Yet in both Japan and Germany, share prices and pressure from nonpermanent owners and agents have virtually no direct or indirect influence on management decisions.

The Internal Capital Market

The internal capital market, the system by which corporations allocate available capital from both internal and external sources to investment projects within and across business units, mirrors the external capital market. The four attributes that shape investment behavior in the internal capital market parallel those that shape the external market (see Figure 13.2). These four attributes are the particular goals that corporations set; the organizational principles that govern the relationship between senior management and units; the information and methods used to value and monitor internal investment options; and the nature of interventions by senior managers into investment projects.

An important aspect is highly imperfect information about future prospects and information asymmetries between capital holders—top managers—and those overseeing specific investment opportunities—business unit or functional managers. How a company organizes and manages its operations will affect the information that is available and the investments made by the company.

The U.S. internal market system is structured to maximize measurable investment returns. It is organized to stress financial returns, to motivate managers to achieve financial targets, to raise accountability for unit financial, and to base decision making and investment allocation heavily on financial criteria.

In the U.S. system, corporate goals center on earning high returns on investment and maximizing current stock prices. Management exercises the dominant influence on corporate goals, interpreting signals about desired behavior from the external capital market, influenced by compensation based on current accounting profits or unrestricted stock options that heighten stock price sensitivity.

Boards, which have come to be dominated by outside directors with no other links to the company, exert only limited influence on corporate goals. The presence of knowledgeable major owners, bankers, customers, and suppliers on corporate boards has diminished. An estimated 74 percent of the directors of the largest U.S. corporations are now outsiders,

and 80 percent are CEOs of other companies. The move to outside directors arose out of calls for greater board objectivity. But the cost of objectivity has been directors who lack ties to the company and whose own companies are in unrelated businesses. As a consequence, they often lack the time or ability to absorb the vast amounts of information required to understand a company's internal operations. Moreover, most directors have limited stakes in the companies they oversee. While the median aggregate holdings of the board account for an estimated 3.6 percent of equity, many directors have no shares at all or only nominal holdings.

In terms of the organizational principles, the structure of American companies has undergone a significant change over the past two decades, with a profound impact on the internal capital market. Many American companies have embraced a form of decentralization that involves highly autonomous business units and limited information flows both vertically and horizontally. As a consequence, top management has become more distanced from the details of the business. Senior managers have little knowledge or experience in many of the company's businesses and often lack the technical background and experience to understand the substance of products or processes—partly because such knowledge is unnecessary in the typical decision-making process. Understandably, decision making in this system involves comparatively limited dialogue among functions or business units. Extensive diversification by American companies into unrelated areas has accentuated these tendencies and has further impeded the flow of information throughout the organization.

Both as a cause and an effect, capital budgeting in the U.S. system takes place largely through "by the numbers" exercises that require unit or functional managers to justify investment projects quantitatively. The system rarely treats investments such as R&D, advertising, or market entry as investments; rather they are negotiated as part of the annual budgeting process, which is primarily driven by a concern for current profitability. Intangible investments such as cross-functional training for workers may not even be tracked in the financial system—and thus may be sacrificed in the name of profitability.

Senior managers intervene infrequently, exerting central control through strict financial budgeting and control systems that focus on the unit's performance. Investment projects are placed on accelerated

schedules under tight budgets, and senior managers step in only when financial measures indicate that a project is failing.

Both the Japanese and German systems are profoundly different from the American system. For both, the predominant aim is to secure the position of the corporation and ensure the company's continuity. Information flow is far more extensive, and financial criteria play less of a determining role in investment decisions than in the United States. (See Figure 13.4.)

In both systems the perpetuation of the enterprise is the dominant goal. In Japan, this goal is reinforced by the fact that most directors are members of management; moreover, lifetime or permanent employment is the norm in significant-sized companies. In Germany, the supervisory board consists of representatives of banks and other significant owners, and in large companies, 50 percent of the board comprises representatives of employees. All major constituencies thus influence corporate goals. As far as top managers' performance incentives are concerned, in both Germany and Japan, current earnings or share prices play only a modest role in promotion or compensation.

Companies practice a form of decentralization that involves much greater information flow among multiple units in the company as well

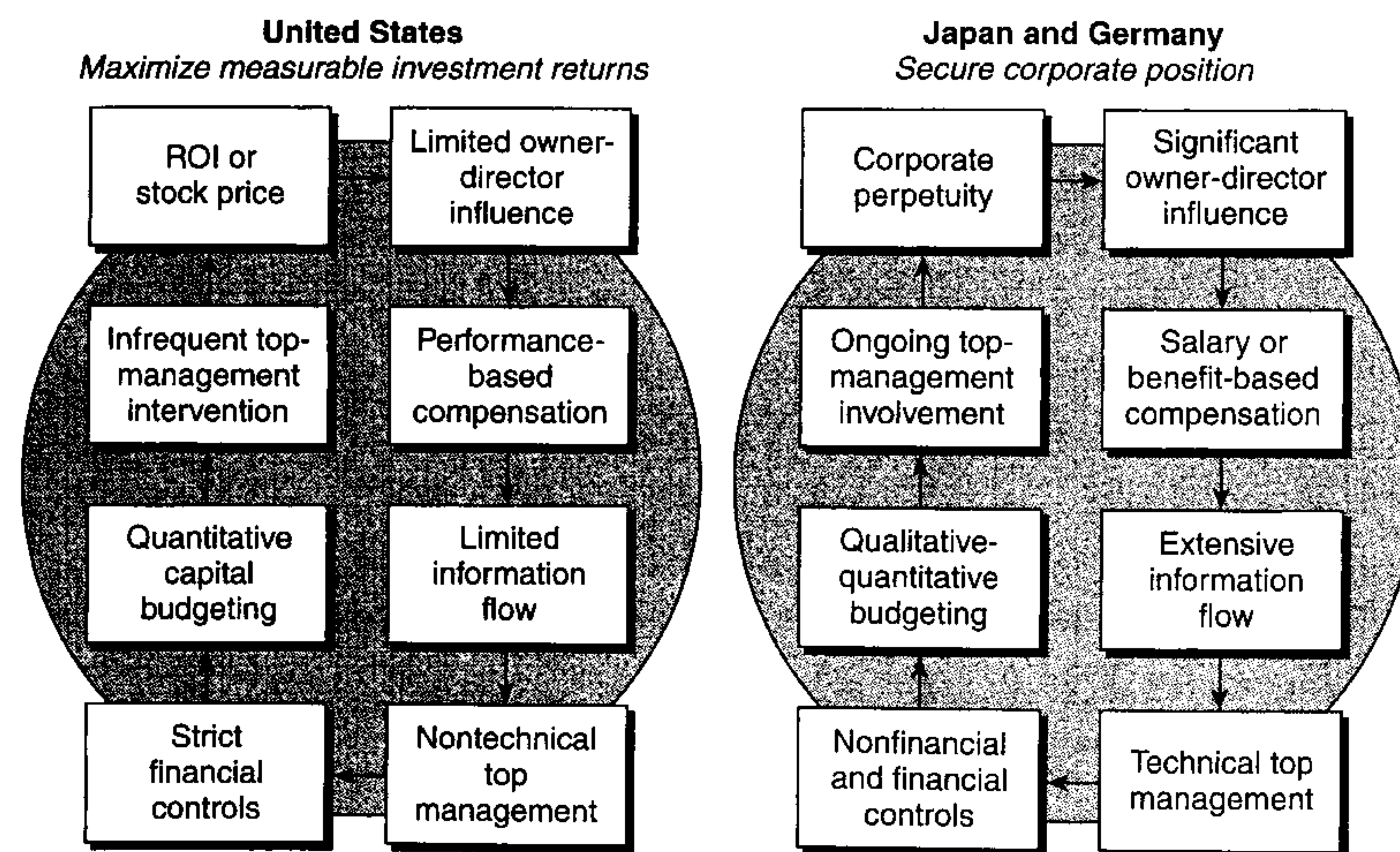


Figure 13.4 Internal Market Overview

as with suppliers and customers. Japanese and German managers tend to have engineering or technical backgrounds, spend their careers with one company, advance through tenure in one or a few units, and possess a deep knowledge of the company's important businesses. Top managers get involved in all important decisions, which are usually made after extensive face-to-face consultation and discussions aimed at building consensus. This is both an effect and a cause of the fact that companies in Japan and Germany tend to be less diversified than U.S. companies; where diversification occurs, it tends to be into closely related businesses.

Financial control and capital budgeting are part of the management process—but technical considerations and a company's desire to ensure its long-term position in the industry drive investments. German companies are particularly oriented to attaining technical leadership; Japanese companies especially value market share, new product development, technological position, and participation in businesses and technologies that will be critical in the next decade.

In comparing the U.S., Japanese, and German systems, important differences in management practices emerge. For example, American managerial innovations have resulted in less face-to-face consultation, information flow, and direct management involvement in investment choices—all in the name of responsiveness and efficiency. Many of these innovations were the American solution to the problems of size and diversity that arose in the diversification boom of the 1960s and preceded the major changes that have occurred in the external capital market.

In contrast, Japanese innovations in management, such as just-in-time manufacturing, total quality management, and greater cross-functional coordination, have resulted in more vertical and horizontal information flow and involvement by management in decisions. This comes at the expense of efficiency in the short run—but often results in greater effectiveness and efficiency over time, as knowledge and capabilities accumulate.

The extensive flow of information is perhaps the most potent strength of the Japanese and German systems. Ironically, the U.S. system, designed to boost management responsiveness to the marketplace, actually limits and constrains managers in responding effectively by limiting the information used in decisions, working against crucial forms of

investment, and all but blocking the achievement of cross-unit synergies.

Comparative Systems of Capital Allocation

The external and internal capital allocation markets are linked; together they combine to form a self-reinforcing national system for allocating investment capital. The way companies allocate capital internally is influenced by their perceptions of how equity holders and lenders value companies. Conversely, the perceptions of owners and agents about how companies are managed and how they allocate their funds internally will influence the way in which investors value companies and the way in which they attempt to affect management behavior. The use of stock options in management compensation creates a direct link between stock market valuation and management behavior.

Overall, the nature of the American system of capital allocation creates tendencies and biases in investment behavior that differ greatly from those in Japan and Germany. (See Figure 13.5.) The American system:

- Is less supportive of investment overall because of its sensitivity to current returns for many established companies combined with corporate goals that stress current stock price over long-term corporate value. This explains why the average level of investment in American industry lags that in both Japan and Germany.
- Favors those forms of investment for which returns are most readily measurable—reflecting the importance of financial returns and the valuation methods used by investors and managers. This explains why the United States underinvests, on average, in intangible assets, where returns are more difficult to measure.
- Is prone to underinvest in some forms and, simultaneously, to overinvest in others. The U.S. system favors acquisitions, which involve assets that can be easily valued, over internal development projects that are more difficult to value and constitute a drag on current earnings. The greater overall rate of acquisitions in the United States is consistent with these differences.

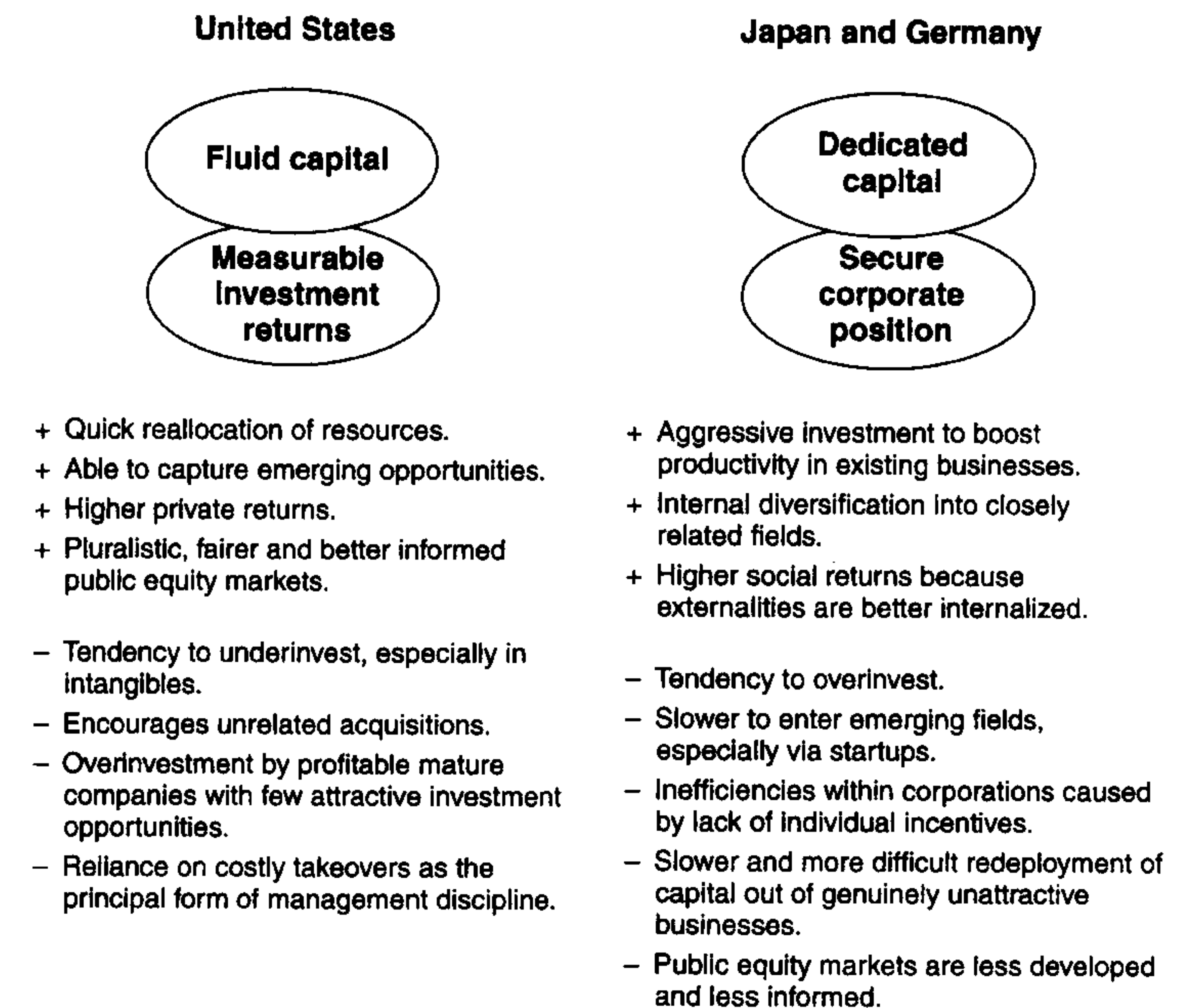


Figure 13.5 Comparative National Investment Systems

- Encourages investment in some sectors while limiting it in others. It is at its best with companies in obviously high-technology or emerging industries, especially those with rapid growth and high perceived upside potential. The American system also supports investment in turnarounds or other situations of clear discontinuity. In these cases, investors recognize that current earnings are irrelevant and seek other value proxies such as patents, new product announcements, research pipelines, and growth of new service locations that are more supportive of investment. This explains why the United States invests more than its competitors in some industries but less in others, why it performs well in funding emerging companies, and why it often awards high stock prices to turnarounds with current losses.
- Allows some types of companies to overinvest. For example, case studies of takeovers demonstrate a tendency by managers to con-

tinue investing (and to continue accumulating cash) as long as current earnings are satisfactory or until the company's situation so clearly deteriorates that it changes hands. This explains why some companies waste resources while American industry as a whole lags in investment.

It is important to note that there are companies and owners in the United States who operate differently from the predominant national system—who have overcome the disadvantages of the American system and achieve superior results. Examples of these are companies that have permanent and active family ownership, such as Cargill, Hallmark, Hewlett-Packard, Motorola, and others, which seem to enjoy competitive advantages in investing.

For example, two of Motorola's most important businesses, semiconductors and cellular telephones, were almost canceled in their early stages because they did not generate clearly measurable financial returns. Robert Galvin, a member of the founding family of Motorola and the company's chief executive officer, intervened in both cases and continued the investments. In the semiconductor situation, Galvin overrode the decision of his board of directors. Today semiconductors and cellular telephones form the foundation for a large part of Motorola's business, generating substantial financial returns for its shareholders.

Investors such as Warren Buffett's Berkshire Hathaway have succeeded by, in effect, becoming permanent owners of acquired companies, supporting capable managements and concentrating on building the company. Overall, however, the U.S. system as it applies to the great majority of American owners, investors, managers, directors, and employees works at cross-purposes to investment decisions that will produce competitive companies and a strong national economy.

Trade-Offs Among Systems

While the U.S. system has significant disadvantages, it would be incorrect to conclude that it lacks any advantages or that the systems of Japan and Germany are ideal. Each national system necessarily involves trade-offs; thus while the U.S. system needs reform, it also embodies important strengths that should be preserved.

The U.S. system, for example, is good at reallocating capital among sectors, funding emerging fields, and achieving high private returns each period. These benefits, of course, come at a price. The responsiveness and flexibility of the system are achieved at the expense of failing to invest enough to secure competitive positions in existing businesses, investing in the wrong forms, and overinvesting in some circumstances.

The Japanese and German systems also have strengths and weaknesses. These systems encourage continued, aggressive investment to upgrade capabilities and increase productivity in existing businesses. They also encourage internal diversification into related fields, building upon and extending corporate capabilities. These qualities, however, also exact a cost in Japan and Germany. For example, these systems create their own tendency to overinvest in capacity, to proliferate products, and to maintain unprofitable businesses indefinitely in the name of corporate perpetuity. They also exhibit a slower tendency to redeploy capital out of genuinely weak businesses and an inability to enter emerging fields rapidly, particularly through startups. Managers generally have fewer performance incentives, and companies have a harder time dismissing poor performers.

In general, the U.S. system is geared to optimize short-term private returns; the Japanese and German systems optimize long-term private and social returns. By focusing on long-term corporate position and creating an ownership structure and government process that incorporate the interests of employees, suppliers, customers, and the local community, the Japanese and German systems better capture the social benefits that private investment can create.

There is some evidence that the national systems are converging—that Japan and Germany are moving toward a more American-like system. Japanese banks may be forced to liquidate some of their equity holdings to maintain adequate cash balances; in Germany, there are proposals to limit bank ownership of equity. Yet these changes are modest—if Japanese or German owners are forced to sell some of their equity holdings, they will first sell their nonpermanent shares that are actively traded and have little influence on corporate behavior. Any major change in Japan and Germany would represent a substantial threat to those nations' economies due to their relatively uninformed traded capital markets.

Changes are also occurring in the United States, as institutional investors have discussions with management and some boards take a more active role in corporations. As in Japan and Germany, these changes appear isolated and sporadic, and the underlying causes of the U.S. investment problem remain the same. Neither small improvements in the United States nor hopes that Japan and Germany will change are substitutes for meaningful reform of the U.S. system. (See the insert "The Case of Cummins Engine: Increasing Private Ownership in a Publicly Traded Company.")

The Case of Cummins Engine: Increasing Private Ownership in a Publicly Traded Company

Rebecca Wayland

Cummins Engine Company, a \$3.4 billion industrial corporation illustrates how a creative management team can structure a "privately owned, publicly traded" American company, approximating some of the advantages in the Japanese and German systems. In 1990, Cummins chairman and chief executive officer, Henry Schacht, concluded a deal that resulted in 40 percent of the company's stock being in the hands of patient investors, including three of its important business partners, company employees, and the founding Miller family. While it is still too early to evaluate the arrangement definitively, recent results indicate that Cummins' strategy may be paying off.

The Cummins story begins in 1919, when the company was founded in Columbus, Indiana. After World War II, Cummins enjoyed rapid growth into the 1970s. By 1979, Cummins Engine was the world leader in large, heavy diesel engines, with a 46 percent share of the market for over-the-road trucks. Following a succession of financings, the family stake in the company diminished; by 1980, 75 percent of the company's shares on the New York Stock Exchange were held by fragmented public investors.

In the 1980s, three factors combined to change the diesel engine market. First, the market's overall growth slowed significantly. Second, the

emergence of energy efficiency and clean air as important policy issues put increased pressure on Cummins to invest in R&D—an expenditure that had already mushroomed from \$22 million in 1971 to \$68 million in 1980. Third, foreign competition intensified as Japanese producers prepared to enter the U.S. market armed with an estimated 30 percent cost advantage.

To respond to these challenges, Cummins embarked on a three-part strategy supported by an ambitious investment program. Cummins broadened its traditional product line within the heavy-duty markets and expanded into smaller diesel engines; entered the non-truck engine markets and developed its international operations; and initiated a full-scale restructuring program designed to reduce its costs by 30 percent, with prices scheduled to come down with costs. Cummins estimated the three measures would cost \$1 billion; the company's total market value was \$250 million.

By 1985, Cummins' strategy had yielded a new product line and a 5 percent reduction in costs. That year, however, Japanese producers entered the U.S. diesel market with products priced 30 percent below Cummins'. Faced with this challenge, Cummins chose to cut its prices to match the Japanese competitors, even though its costs had not yet fallen to that level—thereby sacrificing profits rather than market

share. As a consequence, Cummins suffered losses for the next three years, while reaching cost parity with the Japanese by the late 1980s.

In 1989, Cummins faced a different kind of challenge. After Hanson PLC, known for buying companies and dramatically cutting costs and investment, acquired a 9.8 percent stake in the company, Cummins' customers became alarmed at the threat of future cuts in Cummins' investment program. In July 1989, the Miller family took the unprecedented step of buying back the Hanson shares, ending the uncertainty. However, almost immediately, Hong Kong investor Industrial Equity Pacific began acquiring a large position in Cummins and demanded a seat on the board. Cummins initiated a lawsuit against IEP, which ultimately sold its stake at a loss in 1991.

These two threats convinced Schacht and other top Cummins managers that the interests of the current shareholders and the interests of customers, employees, the community, and managers were in danger of diverging—and that Cummins' strategy was potentially in jeopardy. To address this issue, Schacht sought to revise Cummins' ownership structure.

In 1990, Schacht concluded a deal with three important business partners. Ford bought a 10% stake, Tenneco-J.I. Case, a 10 percent

stake, and Kubota, a 5 percent stake. In addition, Ford took an option for an additional 10 percent of Cummins' shares. Each owner paid a 25 percent premium above Cummins' then-current stock price of fifty-two dollars per share and agreed not to sell the stock for six years. The two largest shareholders, Ford and Tenneco, each received a seat on the Cummins board of directors. Financially, the deal targeted a 15 percent return on equity over a seven-year business cycle.

The Miller family retained a 4 percent stake in the company; employees held 10 percent. Together, these stable, long-term shareholders held 40 percent of the company's equity. Interestingly, other Cummins' customers applauded the move, even though it involved their competitors, citing the advantages of stable ownership and better products for all customers.

Under the new ownership structure, representatives of Ford and Tenneco participated on the board and actively supported the investment program. Senior managers worked without employment contracts, pre-

venting management entrenchment and allowing strong board intervention. Accompanying the shift in ownership at Cummins were several reorganizations designed to streamline operations.

In 1990, Cummins continued to suffer reversals, this time a result of the recession and the onset of competition from a revitalized Detroit Diesel Corporation. In January 1991, Cummins stock hit a low of thirty-two dollars and fifty cents per share.

Indications, however, suggest that Cummins' nine-year effort is beginning to pay off. New product introductions have been successful; in the traditional heavy duty truck market, Cummins' market share appears to have stabilized and begun a recovery. The company's international off-highway business has continued to grow. The Japanese challengers have exited the major U.S. markets. During 1991, Cummins reached breakeven and showed a profit for the first quarter of 1992. Finally, Cummins' stock rose to seventy-six dollars per share in June 1992, a 100 percent increase over its thirty-two dollar and fifty cent price of January 1991.

Proposals for Reform

Overall, the American system for capital allocation is not serving the American economy well. None of the participants in the system is satisfied, and each one blames the other for the problem. American managers complain that owners and agents do not have the company's long-term interests at heart and are seeking only high, short-term profits.

Institutional investors see managers as self-serving, overpaid, and underperforming when it comes to shareholder value. Owners are dismayed that many institutional investors underperform market averages. Small shareholders feel vulnerable and powerless. Employees fear a system that may cost them their jobs. Communities and their elected representatives worry about takeovers that threaten people's jobs, income, and the stability of the whole community.

Each group is behaving rationally—given the current circumstances. All are trapped in a system that ultimately serves the interests of no one. Each is pursuing its own narrow goals within the system—but the goals operate at cross-purposes.

Not surprisingly, there are calls for reform and regulation from all sides. Also, not surprisingly, many of the current proposals for reform would actually prove counterproductive, treating either symptoms or only a fragment of the problem and, in the process, further skewing the operation of the larger system.

One set of proposals, for example, seeks to slow down securities trading by taxing securities transactions or increasing margin requirements. These proposals, however, merely increase the inefficiency of the equity markets without addressing the underlying problem—the lack of alignment between investors' and managers' goals. Another set of proposals seeks to reduce the rate of trading by limiting corporate disclosures—for example, doing away with quarterly financial reports. The most likely result of this reform, however, would probably be to make investors even less informed.

A third group of proposals seeks to rebalance the relative power of owners and managers, for instance, by strengthening the proxy system or increasing the number of outside directors. These proposals also fail to address the systemic nature of the problem. "Objective" outside directors, for example, are closely aligned with management, they are not as expert in the business, and they lack the detailed knowledge of the company needed for a truly objective evaluation of a business's prospects. Moreover, if the goals of owners, managers, and shareholders remain unaligned, strengthening one player at the expense of another will only tip the system in one particular direction.

A fourth set of proposals would increase the use of stock options in management compensation. Yet unless restrictions were placed on

managers' ability to exercise those options, this step would only heighten current pressures toward maximizing current stock price.

Finally, there are proposals that address the investment problem indirectly while seeking to improve overall U.S. competitiveness; for example, calls for providing government subsidies to particular sectors, creating joint production ventures, and relaxing U.S. antitrust laws. These measures may allow companies to economize on investment—but they run the risk of blunting innovation and undermining competitiveness. They do not address the reasons why companies seem unable to make the investments needed for competitiveness. The only real solution to the failure of the U.S. capital allocation system is to address the system as a "system."

Directions for Systemic Reform

The aim of reform should be to create a system in which managers will make investments that maximize the long-term value of their companies. The interests of capital providers must be aligned with those of the corporation so that investors seek out high-quality information that fosters more appropriate investment choices. CEOs and top managers must organize and manage their companies in ways that encourage investment in the forms that build competitiveness. And public policymakers must craft laws and regulations designed to align private returns and the public good. Policymakers should not create protective measures to shield companies from these pressures but can exert constructive pressures on companies and managers, provided they have appropriate goals and information.

In all of this, it is essential to remember that the United States is an internally consistent system with many component parts. Reform should therefore come through a series of changes, ideally all at once. In addition, appropriate reform will require that each important constituency in the system give up some of its perceived benefits. For example, institutions should not expect to gain greater influence over management without giving up some of their current trading flexibility; management should not expect informed and committed owners without giving them a real voice in decisions.

Reform is needed in five broad areas:

1. Improve the macroeconomic environment; enlarging the pool of capital and increasing the stability of the environment will reduce risk premiums and lower the cost of capital. Public and private sector saving should be increased and a more stable macroeconomic environment created to encourage a stronger foundation for investment.
2. Expand true ownership throughout the system; the current concept of ownership in the U.S. system is too limited, involving just capital, and ownership is largely restricted to outside shareholders. Outside owners should be encouraged to hold larger stakes and to take a more active and constructive role in companies. Directors, managers, employees, and even customers and suppliers should all hold positions as important corporate owners.
3. Align the goals of capital providers, corporations, directors, managers, employees, customers, suppliers, and society. It is possible to create a system of incentives and to alter the rules in a way that helps align the goals of all these constituencies, which share an inherent long-term commonality of interest.
4. Improve the information used in decision making; even if goals are better aligned, the quality of information used to allocate capital throughout the system will affect investment choices. This means greater access to information that better reflects true corporate performance and more use of qualitative assessments of a company's performance and capabilities.
5. Foster more productive modes of interaction and influence among capital providers, corporations, and business units.

Accomplishing these reforms will require changes on the part of government, institutional investors, directors, and managers. (See the insert "The Case of Thermo Electron Corporation.")

Implications for Public Policy

Government, through policies, laws, and regulations, plays a decisive role in creating a nation's system for allocating investment capital. The current U.S. system reflects explicit regulatory choices, most of which

The Case of Thermo Electron Corporation

Rebecca Wayland

Thermo Electron Corporation, a \$676 million company with products in a variety of high-technology fields, illustrates how a large company can structure itself within the U.S. capital allocation system to overcome the market's pressure toward underinvestment and to create opportunities for smaller, riskier, high-growth divisions.

Since its founding by George Hatsopoulos in 1959, Thermo Electron has grown from a startup focusing on high-technology capital equipment to a *Fortune* "500" company with products and research operations in the environmental, energy, metals processing, and biomedical fields. As Thermo Electron increased its portfolio of high-technology activities, its image in the capital markets became that of a large, mature company rather than an entrepreneurial venture. The startup losses required to develop and commercialize new technologies drained corporate earnings while the growth of emerging divisions was often lost in the company's consolidated financial results. Hatsopoulos, deeply concerned about the high effective cost of equity capital in the United States, set out to devise a way to finance the expansion of Thermo Electron that minimized the cost of funds and motivated employees. In 1983, he began

the practice of issuing minority stakes in promising high-technology divisions to the public.

One example of how the practice works—and why it is important—is the spin-off Thermo Cardiosystems, Inc. (TCI), which is currently commercializing its research on HeartMate, implantable cardiac-assist devices (called "ventricular assist devices" or VADs) that could ultimately offer an alternative to heart transplants. The initial research on HeartMate lasted twenty-two years and cost a total of \$50 million, with grants from the National Institutes of Health providing the funding. The research was conducted at Thermo Electron and later at Thermedics, a division that was one of Hatsopoulos's early partial spin-offs. When the product reached the commercialization stage in 1988, the grant began to diminish substantially. Initial product tests for HeartMate had been promising. However, it would take at least another seven years of investment to complete the regulatory process, build manufacturing facilities, and develop the market. This need for continued investment threatened to drag down the earnings of the parent.

In 1988, the company created Thermo Cardiosystems, Inc. and

sold a 40 percent stake on the American Stock Exchange. The partial spin-off shifted TCI's ownership structure from a fragmented group of Thermo Electron and Thermedics investors to a structure in which Thermedics-Thermo Electron owned 60 percent, and a number of other investors, who were specifically interested in the long-term development of the heart technology, owned the balance. The partial spin-off also allowed TCI to raise \$14.5 million in new equity at a far lower cost than its parent. TCI managers and employees received options in TCI stock, undiluted by the performance of the larger corporation.

As the controlling investor in TCI, Thermo Electron remained actively involved in its operations. Thermo Electron top managers were active members of TCI's board of directors (seven of whom were insiders), reviewed its five-year plan and quarterly financial results (often benchmarking them against other divisions), met with managers each month, and engaged in frequent brainstorming sessions to resolve divisional problems. Employees from the parent corporation's research department and from other divisions

shared specialized expertise in medical-related areas and in the process of making the transition from research to manufacturing and sales. Top managers' compensation plans included options in the stock of other Thermo Electron companies to encourage this cooperation. The parent also provided cost-effective and sophisticated administrative services that TCI could not support independently.

Since 1989, TCI has continued its investment in HeartMate, receiving Food and Drug Administration approval for clinical trials, implanting the VAD in over eighty patients worldwide, and establishing sixteen FDA-approved test centers in the United States and four sites overseas. In the marketplace, TCI has benefited from the credibility with hospitals and customers in the medical field established by other Thermo Electron products. Although the commercialization process is still underway, TCI managers believe that the partial sale strategy created by George Hatsopoulos has already been instrumental in supporting the investment and other activities needed to bring HeartMate to the medical market.

emerged in the 1930s to deal with abuses in the financial markets at that time. Yet the cumulative effects of regulation have had unintended consequences for U.S. corporations; these consequences have never been carefully examined.

The following reforms rest on principles that differ markedly from those that have defined the regulatory framework of the traditional U.S.

system. It is possible to modify incentives and eliminate unneeded regulatory guidelines to encourage more competitive investment behavior and, at the same time, avoid abuses. For example, current regulations limit the size of ownership stakes to prevent abuses by large owners. A better approach would be to broaden corporate ownership and align the goals of capital providers, corporations, managers, employees, and society. Through this approach, capital providers would become knowledgeable and constructive participants rather than adversaries.

- *Remove restrictions on investor share ownership; encourage long-term employee ownership; lower tax barriers to holding significant private ownership stakes.* It is essential to modify the structure of corporate ownership. The regulations and tax policies that artificially restrict the ability of investors to hold significant corporate stakes should be reexamined. Ownership by employees is desirable, provided that employee owners are long term rather than transient. Under this provision, the market would continue to have the strength of a wide investor base, while gaining the benefit of owners with larger stakes in particular companies. The large number of substantial U.S. institutional investors will prevent any undue concentration of economic power.
- *Create a long-term equity investment incentive.* The single most powerful tool for modifying the goals of owners and agents is a significant incentive for making long-term investments in corporate equity. This proposal aims to change the concept of ownership and the approach to valuing companies and, at the same time, to encourage the broad form of investment where the social benefits are the greatest.

Such an incentive would be carefully designed and narrowly drawn. It would apply only to investments in corporate equity of operating companies, and it would not apply to capital gains from investments in nonoperating companies holding real estate or other financial assets. Capital gains from bond appreciation, real estate appreciation, collectibles, and other sources would also be excluded. The incentive would require a minimum five-year holding period, with greater incentives

provided for even longer holdings. It would be applied prospectively, limited to new investments and new gains.

The enactment of such an incentive would lead to changes throughout the entire system by changing the goals of owners and agents. Owners would begin to favor agents who deliver a greater proportion of income in the form of long-term equity gains and to penalize those who realize only short-term gains from rapid trading. Institutional investors, in turn, would modify their monitoring and valuation approaches, seeking out companies with attractive prospects five or more years in the future. A further consequence would be the development and distribution of better information, detailing the investment programs of companies and their long-term prospects, including physical and intangible assets.

If the long-term equity incentive is to have its full impact, it should be extended to currently untaxed investors, such as pension funds that account for a substantial fraction of equity capital and trading. The most practical way to do this is to pass through an equity investment incentive to pension or annuity beneficiaries. Beneficiaries would pay a rate of tax that varied depending on the source of their pension income. The effect of instituting such an incentive would be to create pressures from pension beneficiaries and trustees on their investment managers to deliver a higher and higher proportion of income from long-term equity gains. It should also be noted that extending the long-term equity incentive to pension beneficiaries extends the tax benefit to the U.S. work force, not just to Americans with high incomes.

- *Eliminate restrictions on joint ownership of debt and equity.* Financial institutions should be allowed to hold equity for investment purposes in companies to which they have provided debt financing. Debt holders who also hold equity have greater incentive to invest in information and monitoring and to provide new debt financing for worthy projects.
- *Reduce the extent of subsidies for investment in real estate.* U.S. tax policy has led to a disproportionate investment in real estate compared with other forms of investment that create greater social returns. Future investment incentives should redress this imbalance, favoring R&D, corporate equity, and training, rather than real estate.

- *Modify accounting rules so that earnings better reflect corporate performance.* Because many of the most important forms of investment must be expensed under current accounting standards, accounting earnings are a flawed measure of true earnings. The accounting profession should create new standards for accounting for intangible assets such as R&D.
- *Expand public disclosure to reduce the cost of assessing true corporate value.* Disclosure should be extended to include areas such as a company's expenditures on training, its stock of patents, or the share of sales contributed by new products, information that provides important measures of long-term corporate value.
- *Allow disclosure of "insider" information to significant long-term owners, under rules that bar trading on it.* A small group of institutions and other owners who have held a significant ownership stake for a qualifying period—1 percent or more for one year or more—should have access to more complete information about company prospects than is required to be disclosed publicly, provided they do not disclose the information to third parties. Greater disclosure would open up an avenue for significant long-term owners to have a more informed dialogue with management, and it would support more informed valuation based on long-term prospects.
- *Loosen restrictions on institutional board membership.* A direct role for significant owners on boards of directors will make boards more representative of long-term owner interest—provided, that is, that the goals of owners and managers have been realigned.
- *Encourage board representation by significant customers, suppliers, financial advisers, employees, and community representatives.* The current trend in board membership has created boards populated by busy, underinformed CEOs. A far better approach would be to create a role on boards of directors for significant customers, suppliers, investment bankers, employees, and others linked closely to the company and with a direct interest in its long-term prosperity.
- *Codify long-term shareholder value rather than current stock price as the appropriate corporate goal.* Existing corporate law identifies

long-term shareholder value as the appropriate corporate goal. In practice, however, short-term stock price may take precedence as managers or directors who clearly compromise short-term shareholder returns are often subject to lawsuits. To remedy this situation, long-term shareholder value should be identified as the explicit corporate goal. The burden of proof should shift so that managers must explain any decision that is not consistent with long-term shareholder value.

- *Extend tax preferences only to those stock options and stock purchase plans with restrictions on selling.* The use of unrestricted stock options and employee stock purchase plans fails to make managers and employees true owners because managers are prone to sell shares based on short-term stock price movements. To qualify for tax benefits, such plans should be restricted in terms of holding period and percentage of shares sold at any one time.
- *Provide investment incentives for R&D and training.* Making the existing R&D tax credit permanent and creating a parallel tax credit for training investments would help stimulate private investments that become valuable national assets.

Implications for Institutional Investors

The American system of capital allocation creates perverse outcomes for institutional investors, especially for pension funds. These institutions should be the ideal long-term investors. Instead, the American system produces the paradoxical situation in which many institutions are entrusted with funds for extremely long periods, yet they trade actively. Transaction costs mean that many institutions underperform the market. Institutions are at odds with management, whom they see as misapplying corporate resources, yet they feel powerless to do anything about it. And worst of all, institutions are trapped as crucial actors in a system that undermines the long-term earning power of the American companies on which they have ultimately to depend.

Even without public policy changes, action by institutions can change this system. First and foremost, institutions must understand why man-

agements view them as adversaries. They must understand the subtle consequences of their monitoring and valuation practices on corporate investment behavior. And they must recognize that greater influence over management will require less flexibility, slower trading, and greater knowledge of and concern for company fundamentals. Here are some specific changes institutional investors can pursue:

- *Increase the size of stakes.* Increasing the size of stakes will help align the goals of investors and companies, improve the ability of investors to conduct in-depth research on the companies whose shares they hold, and send signals that institutions are serious owners who are interested in the long-term performance of the company.
- *Reduce turnover and transaction costs.* Institutional investors underperform the market largely because of the transaction costs associated with the high turnover of investments. Reducing stock turnover will improve the return that institutions provide to their clients.
- *Select companies more carefully based on fundamental earning power.* Companies with sustained growth potential and earning power will ultimately be rewarded with higher stock prices, even in the current system. The focus of valuation models should shift in this direction. To address information costs, institutions might also form syndicates in which one institution acts as the lead owner in the relationship.
- *Encourage changes in agent measurement and evaluation systems to reflect long-term investment performance.* A new bargain between owners and institutional agents should shift the measurement and reward system toward fees tied to annual or multiyear results and ongoing reporting of fully loaded transaction costs from trading.
- *Transform interactions with management to productive, advisory discussions.* Current interactions between institutional investors and managements are too often cat-and-mouse games played around guessing next period's earnings. What is needed instead are substantive discussions about the long-run competitive position of the company.

- *Create special funds to test these new approaches.* Institutions should create special funds earmarked for long-term investing in significant corporate stakes in exchange for greater influence over management. If necessary, new agreements with owners would be drafted, modifying the funds' fiduciary responsibilities.

- *Support systemic public policy changes.* By supporting the public policy reforms outlined above, institutional investors can help balance and integrate the American system.

Some institutions will resist these changes; they involve new skills, a new definition of investment success, and reductions in liquidity and flexibility. But institutional investors will realize big direct benefits—and benefit further by the creation of stronger, more competitive U.S. companies, on which their portfolios ultimately depend.

Implications for Corporations

Managers are not simply victims of the American system; they have helped create it. Managers have not only shaped the internal market through organizational and managerial practices, but they have also defined their relationship with the external market through such things as board composition, disclosure practices, and the nature of discussions with investors. American managers can play the leadership role in redefining the U.S. capital allocation system; they are the group best positioned to make changes in the current system and to benefit most from reform.

They also may have the most to change. Stated boldly, our research suggests the need to reexamine much of what constitutes the U.S. system of management, with its extreme approach to managing decentralization, its limited flow of information, its heavy use of certain types of incentive compensation systems, and its reliance on financial control and quantitative capital budgeting processes. This system, a post-World War II innovation, carries subtle costs for investment behavior, particularly investments in intangible and nontraditional forms. Some of the most significant changes that management can initiate are the following:

- *Seek long-term owners and give them a direct voice in governance.* The most basic weakness in the American system is transient ownership. However, managers seem to underestimate their ability to do anything about this fundamental problem. As a remedy, managers should seek to have a smaller number of long-term or nearly permanent owners, thus creating a hybrid structure of a "privately held" and publicly traded company. Having fewer long-term owners would alter virtually every facet of the owner-management relationship—including governance, information sharing, measurement, and valuation.
- *Refrain from erecting artificial antitakeover defenses that insulate management.* In the absence of pressure from owners and directors on managers for long-term performance, takeovers are a necessary form of oversight. There have been, however, some inappropriate takeovers, and most takeovers occur only after a prolonged period of corporate decline. The solution is not to erect antitakeover provisions. Rather, it is to reshape the American system so that takeovers are limited to those situations where they are an appropriate response to management's failure to build a long-term competitive position for the company.
- *See management buyouts as a second-best solution.* Management buyouts are only a second-best solution to the problems of the American system. Invariably, the controlling owner in management buyouts is a transaction-driven, financial owner who seeks to realize returns on the investment over a short period of time in order to distribute them to investors.
- *Nominate significant owners, customers, suppliers, employees, and community representatives to the board of directors.* Directors from these categories are likely to have the company's long-term interests at heart and to encourage management to make investments that will improve long-term competitive position.
- *Link incentive compensation to competitive position.* The incentive compensation systems now used in much of American business are counterproductive. The incentives are simply based on the wrong things. Bonuses based on current profits obviously undermine in-

vestment, and stock options increase managers' attention to short-term share prices, particularly if there are no restrictions on selling shares. Compensation systems need to move in the direction of linking pay more closely to long-term company prosperity and to actions that improve the company's competitive position.

- *Move away from unrelated diversification.* Unrelated or loosely related diversification only wastes capital and exacerbates the current management biases against long-term investment. The only way to build competitive companies is to concentrate on a few core fields and invest heavily in them to achieve a unique position.
- *Shift from fragmented to integrated organizational structures.* The decentralized, profit center-based management structure in many American companies must be overhauled. What is needed is a system that recognizes strategically distinct businesses as the proper unit of management but manages them differently. Senior managers at the corporate level must have a substantive understanding of the core technology and the industry. Top management must be involved directly and personally in all significant decisions, particularly investment decisions. There must be extensive consultation and coordination among related business units, with opportunities for the units to share functions and expertise. Such a system would shift measurement and control away from solely financial results, raise senior management confidence in understanding complex investment choices, and better capture complementarities among discrete investment options.
- *Transform financial control systems into position-based control systems.* A new philosophy of management control must be instituted, based as much on the company's extended balance sheet as on its income statement. A company's extended balance sheet measures the assets that constitute its competitive position. Included in such a measurement would be: a broader definition of assets, such as market share, customer satisfaction, and technological capabilities; a measurement of asset quality and productivity in addition to asset quantity; and relative instead of absolute measures, tracking the company performance against significant competitors.

- *Move to universal investment budgeting.* Conventional approaches to capital budgeting were never ideal for evaluating investment choices; they fail to deal with the changing nature of investment. A new system is needed to evaluate investment programs instead of just discrete projects; to treat all forms of investment in a unified manner; and to evaluate investments in two stages—first, determining the asset positions needed for competitiveness and second, evaluating exactly how to achieve those positions.

Toward a Superior American System

The recommendations outlined above are designed to attack the weaknesses of the American system systematically, while preserving the system's considerable strengths. These changes will align the goals of American shareholders, their agents, and American corporations; improve the information used in investment decisions; better capture the externalities in investment choices; evaluate management decisions on criteria more suitable for competitive performance; and make internal management processes more consistent with the true sources of competitive advantage.

If America can make progress on these fronts, it will not only reduce the disadvantages of the U.S. system but also produce a system that is superior to Japan's or Germany's. A reformed U.S. system would be characterized by long-term rather than permanent owners, well-informed rather than speculative traders, and flexible rather than lifetime employees. A reformed U.S. system would produce more careful monitoring of management and more pressure on poor performers than what exists in Japan or Germany. The result would be less wasted investment and less internal inefficiency. Finally, a reformed U.S. system, with its higher levels of disclosure and transparency, promises to be fairer to all shareholders than the Japanese or German systems.

But altering the American system will not be easy. There is a natural tendency to limit change to tinkering at the margins, yet systemic change will be necessary to make a real difference. All of the major constituencies will have to sacrifice some of their narrow self-interests in pursuit of a system that is better overall.

Nevertheless, today there is widespread dissatisfaction with the system as it exists and concern over the direction and performance of American companies in global competition. This suggests that systemic change may be possible. If real change were to occur, the benefits would certainly accrue to investors and companies. But what is more important, the benefits would yield improved long-term productivity growth in the United States, and thus greater prosperity for the entire American economy.