

**Do Entrepreneurs Make Predictable Mistakes?
Evidence from Corporate Divestitures**

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Abstract: This paper assesses the argument that corporate acquisitions are driven mainly by agency considerations. This argument holds that certain kinds of mergers—mergers between firms in unrelated industries, mergers between firms with large differences in price-earnings ratios, and mergers financed with stock swaps, for example—will consistently fail, eventually being reversed in a divestiture. We argue instead that divestitures of previously acquired assets usually result from experimentation and learning, healthy attributes of a market economy. First, we explain that the agency view of divestitures is inconsistent with the Misesian theory of entrepreneurship. Second, we present empirical evidence that the long-term success or failure of corporate acquisitions cannot, in general, be predicted by measures of agency conflicts. Finally, we show that mistaken acquisitions are more likely under certain circumstances, namely during periods of intense, industry-specific regulatory activity. This is consistent with the view, expressed repeatedly in the Austrian literature, that entrepreneurial error is associated with government intervention—in particular, with government ownership of property and interference with the price system.

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After a brief lull in the early 1990s, the market for corporate control has become increasingly active toward the end of this decade. Both 1996 and 1997 set new records for the number of U.S. merger filings, and 1998 brought high-profile “mega-mergers” in financial services, energy, telecommunications, and automobiles.¹ In banking alone, for example, a wave of mergers over the last decade has led to widespread industry restructuring and consolidation: While total industry activity continues to expand, the number of U.S. banks and banking organizations both fell by almost 30 percent between 1988 and 1997 (Berger, Demsetz, and Strahan, 1999).

Like other business practices that do not conform to textbook models of competition, mergers, acquisitions, and financial restructurings have long been viewed with suspicion by many commentators and regulatory authorities. However, it is widely acknowledged by academic researchers that mergers and acquisitions do, on average, create value. Event studies consistently find positive average combined returns to acquirer and target shareholders. As summarized by Jensen (1991, p. 15), “the most careful academic research strongly suggests that takeovers—along with leveraged restructurings prompted by the threat of takeover—have generated large gains for shareholders and for the economy as a whole.” These gains, historically about 8 percent of the combined value of the merging companies, “represent gains to economic efficiency, not redistribution between various parties” (Jensen, 1988, p. 23).²

At the same time, however, several studies have found a sharp divergence between market participants’ pre-merger expectations about the post-merger performance of merging firms, and the firms’ actual performance rates. Ravenscraft and Scherer’s (1987) large-scale study of manufacturing firms, for example, found that while the share prices of merging firms did on

¹ In financial services, Travelers–Citicorp, valued at \$72.6 billion, NationsBank–BankAmerica, \$61.6 billion, and Norwest–Wells Fargo, \$34.4 billion; in energy, Exxon–Mobil, \$86.4 billion; in telecommunications, SBC–Ameritech, \$72.6 billion, Bell Atlantic–GTE, \$71.3 billion, and AT&T–TCI, \$69.9 billion; in automobiles, Daimler-Benz–Chrysler, \$40.5 billion. By contrast, the 1989 acquisition of RJR-Nabisco by Kohlberg Kravis Roberts & Co., considered the capstone of the “decade of greed,” was valued at a mere \$24.7 billion.

² On the gains from mergers, acquisitions, and other restructurings, see also Jensen and Ruback, 1983; Jarrell and Poulsen, 1987; Roll, 1988; Mitchell and Lehn, 1990; Morck, Shleifer, and Vishny, 1990; Romano, 1992; Kaplan and Weisbach, 1992; and Comment and Schwert, 1995.

average rise with the announcement of the proposed restructuring, post-merger profit rates were poor. Indeed, they find that nearly one-third of all acquisitions during the 1960s and 1970s were eventually divested. Ravenscraft and Scherer conclude that mergers typically promote managerial “empire building” rather than efficiency. Corporate strategies of diversification through acquisition, they argue, led to bad choices, mistakes later corrected by divestiture and consequent de-diversification.

Porter (1987) calls the track record of aggressive acquirers during the postwar period “dismal.” He studied 33 large firms from 1950 to 1986 and found that most divested more acquisitions than they kept. While acknowledging that product and capital markets eventually discipline poorly performing firms, forcing divestitures and other restructurings, Ravenscraft and Scherer (1987, p. 217) argue for tighter government restrictions on mergers, particularly diversifying acquisitions and acquisitions financed by stock-swap: “When the roads are strewn with wrecks, government officials cannot rest content because the tow trucks, ambulances, and hearses are doing a good job removing the remnants and clearing the right-of-way.” They suggest that the merger market be slowed by regulation to prevent entrepreneurs from making unwise decisions.³

Implicit in these criticisms is the idea that divestitures of previously acquired assets reflect past errors, and that these errors can be foreseen (and prevented, if regulators are appropriately empowered). Certain types of acquisitions, it is claimed, are more likely to be later divested, so knowledgeable managers will tend to avoid them. That such acquisitions occur is cited as evidence for widespread agency problems: farsighted managers pursuing efficiency would not consistently make the same mistakes. In this sense, the takeover wave of the 1980s is often understood as an “undoing” of the earlier, conglomerate merger wave of the 1960s and early 1970s. According to conventional wisdom, the 1980s was a period of re-specialization or “refo-

³ Jensen (1986, 1993) argues similarly that diversifying acquisitions resulted from widespread agency problems in corporations, but he does not recommend any regulatory response: “The legal/political/regulatory system is far too blunt an instrument to handle the problems of wasteful managerial behavior effectively” (1993, p. **). Instead, he advocates alternative forms of organization such as LBO associations and venture capital funds (see especially Jensen, 1989).

cus,” showing the failures of unrelated diversification. The last thirty years have thus been a “round trip of the American corporation” (Shleifer and Vishny, 1991, p. 54).

The conventional wisdom on sell-offs can be challenged on at least four grounds. First, divestitures of previously acquired assets do not necessarily show that the original acquisitions were failures. Weston (1989) argues that divestitures occur for a variety of reasons, such as changes in corporate strategies and antitrust rules, and not necessarily poor performance. Kaplan and Weisbach (1992) studied 217 large acquisitions completed between 1971 and 1982 and found that while 43.9 percent had been divested by 1989, only about a third of those divestitures were responses to poor post-merger performance. Thus the mere fact that many acquisitions are later divested does not prove widespread managerial misconduct.

Second, even unsuccessful acquisitions are not “mistakes” if poor post-merger performance could not have been anticipated at the time of acquisition. Divestitures of underperforming subunits may be efficient responses to unanticipated changes in industry and regulatory conditions. Such changes cannot be forecast with certainty, and thus *ex post* viability is not a good indicator of *ex ante* efficiency. The fact that some mergers—indeed, many entrepreneurial actions—turn out to be unprofitable, does not imply “market failure” or prescribe any policy response. In a world of uncertainty some actions will always be regretted in hindsight. But this is due not to market failure, but to imperfect knowledge. Final judgements about success and failure can be made only *ex post*, as the market process plays itself out.⁴ In short, that entrepreneurial acumen is less than perfect is surprising only to those committed to static equilibrium models in which uncertainty is defined away.

Third, the failure of a particular acquisition does not necessarily indicate a failure of the underlying acquisition *strategy*. Certain kinds of acquisitions—for example, acquiring a firm in a

⁴ Certainly, there is no reason to believe that courts or regulatory authorities can make better judgements than the market participants. The decisions of courts and government agencies will in fact tend to be far worse: Unlike market participants, judges and bureaucrats pursue a variety of private agendas, unrelated to economic efficiency. Furthermore, the market is quick to penalize error as it is discovered; no hearings, committees, or fact-finding commissions are required.

knowledge-intensive, high-technology industry—may be riskier than others. If the returns from a successful integration of the target’s activities with the firm’s existing activities are sufficiently high, then the acquisition has positive expected value, even if it is more likely to fail than a “safer” acquisition. Matsusaka (1997) offers a related interpretation for corporate diversification. Diversifying acquisitions represent experiments, as firms try various combinations of businesses, seeking those that match their capabilities (in the sense of Penrose, 1959; Nelson and Winter, 1982; Wernerfelt, 1984). After learning their capabilities, firms divest acquisitions that turn out to be poor matches. In this sense, divestitures reflect successful experiments—the acquirer learns that the target’s industry is not a good match for its capabilities. Such “match-seeking” firms will actively acquire and divest over time.

Fourth, the market for corporate control is already highly regulated, and it is difficult to draw from current and recent market performance strong conclusions about how unhampered capital markets would work. For example, Ravenscraft and Scherer (1987), Porter (1987), and other critics propose particular *sequences* of inefficient and efficient restructurings: diversifying, empire-building acquisitions in the 1960s and early 1970s, then efficient divestitures in the 1980s. But why did entrepreneurs make systematic mistakes during the conglomerate period? What accounts for this cluster of errors?

Our paper contributes to this debate by showing that the agency view of divestitures is inconsistent with the Misesian theory of entrepreneurship. Moreover, we discuss empirical evidence that the long-term success or failure of corporate acquisitions cannot, in general, be predicted by measures of agency conflicts. Instead, divestitures of previously acquired assets are more likely when firms are experimenting, learning, and otherwise trying to improve their performance. Finally, we show that mistaken acquisitions are more likely under certain circumstances, namely during periods of intense, industry-specific regulatory activity. Our own research on restructuring shows that significantly higher rates of divestiture follow mergers that occur in a cluster of mergers in the same industry. As argued by Mitchell and Mulherin (1996) and Andrade

and Stafford (1997), mergers frequently occur in industry clusters, suggesting that mergers are driven in part by industry-specific factors, such as regulatory shocks. When an industry is regulated, deregulated, or re-regulated, economic calculation becomes more difficult, and entrepreneurial activity is hampered. It should not be surprising, then, that poor long-term performance is more likely under those conditions.

This result is consistent with the view, expressed repeatedly in the Austrian literature, that entrepreneurial error is associated with government intervention—in particular, with government ownership of property and interference with the price system. “Government activity and widespread errors necessarily go hand in hand” (Hülsmann, 1998, p. 13). Mises famously showed that economic calculation is not possible without private property in all markets, especially markets for factors of production. The Austrian business-cycle literature suggests that entrepreneurial errors are more likely under government-sponsored credit expansion. This paper makes a similar argument: Entrepreneurial decisions to make acquisitions that will later be regretted, and divested, are more likely in the wake of government intervention in particular industries.

The remainder of the paper is organized as follows. Section one reviews the Austrian literature on entrepreneurship, uncertainty, and economic calculation, suggesting that the ex post success of entrepreneurial actions cannot be forecasted based on generally available information. Section two introduces recent theory and evidence on the reasons for mergers and divestitures, contrasting two opposing views of sell-offs: empire-building and experimentation. Section three describes an empirical investigation into the pre-merger causes of divestiture, challenging the generally accepted, empire-building explanation. Section four concludes.

1. Entrepreneurship, profit, and loss

The essence of entrepreneurship, as defined by Mises, is bearing uncertainty. Production unfolds through time, so the entrepreneur must purchase factors of production in the present (paying today’s prices, which are known), in anticipation of revenues from the future sale of the

product (at tomorrow's prices, which are uncertain). Entrepreneurial profit or loss is the difference between these revenues and the initial outlays, less the general rate of interest. As such, profit is the reward for successfully bearing uncertainty. Successful promoters make accurate forecasts of future prices and receive returns greater than their outlays. Those whose forecasts are less accurate earn losses. Promoters who consistently make poor forecasts quickly find themselves unable to secure any further resources for investment and eventually exit the market.

In textbook models of competitive general equilibrium, uncertainty is defined away, replaced by probabilistic risk: the future is not known with certainty, but the probability distributions of all possible future events are known.⁵ It is thus possible to anticipate which actions, on average, would be profitable. In a world of "true" (structural, rather than parametric) uncertainty, however, profit opportunities do not exist "out there," waiting to be realized by anyone willing to take a specified action. In this sense, it is impossible to forecast precisely those actions that will generate profits. As Mises (1949, p. 252) puts it, "the outcome of action is always uncertain. Action is always speculation." Consequently, "the real entrepreneur is a speculator, a man eager to utilize his opinion about the future structure of the market for business operations promising profits. This specific anticipative understanding of the conditions of the uncertain future *defies any rules and systematization*" (p. 585, emphasis added).

All entrepreneurs, particularly those who operate in financial markets, use economic calculation as their primary decision-making tool.⁶ By economic calculation we simply mean the use of present prices and anticipated future prices to compare present costs with expected future benefits. In this way the entrepreneur decides what goods and services should be produced, and what methods of production should be used to produce them. "The business of the entrepreneur is not

⁵ This is what Knight (1921) describes as "risk," rather than "uncertainty." Mises (1949, pp. 110–15) replaces Knight's distinction with that between "class probability," in which members of a class of events share certain characteristics, and "case probability," where each event is a unique case.

⁶ Klein (1999) argues that financial-market entrepreneurship is a particularly important form of entrepreneurial activity, though it has received little attention in the Austrian literature.

merely to experiment with new technological methods, but to select from the multitude of technologically feasible methods those which are best fit to supply the public in the cheapest way with the things they are asking for most urgently” (Mises, 1951, p. 110). To make this selection, the entrepreneur must weigh the costs and expected benefits of various courses of action, and for this he needs the cardinal numbers provided by money prices. Monetary calculation, then, requires private property and market prices (Mises, 1949, p. 229).

Mises’s famous 1920 essay on economic calculation under socialism is not so much about socialism per se; it is an argument about the role of prices for capital goods (Rothbard, 1962, pp. 547–78; Klein, 1996). Entrepreneurs make decisions about resource allocation based on their expectations about future prices, and the information contained in present prices. To make profits, they need information about all prices, not only the prices of consumer goods but the prices of factors of production. Without markets for capital goods, these goods can have no prices, and therefore entrepreneurs cannot make judgments about the relative scarcities of these factors. In short, resources cannot be allocated efficiently. In any environment, then—socialist or not—where a factor of production has no market price, a potential user of that factor will be unable to make rational decisions about its use. Stated this way, Mises’s claim is simply that efficient resource allocation in a market economy requires well-functioning asset markets.

Despite Mises’s explicit focus on entrepreneurship, much of modern production theory—indeed, the entire neoclassical theory of the firm—focuses not on entrepreneurs, but managers. The traditional theory of profit maximization is nearly always told from the perspective of the *manager*, the agent who operates the plant, not that of the *owner*, who supplies the capital to fund the plant. Yet owners control how much authority to delegate to operational managers, so capitalists are the ultimate decision makers. To understand the firm, then, we must focus on the actions and plans of the suppliers of financial capital, the capitalist–entrepreneurs.

It is true, of course, that when capitalist–entrepreneurs supply resources to firms, they usually delegate to managers the day-to-day responsibility for use of those resources. The resulting

problem of managerial discretion—what we now call the principal–agent problem—occupies much current research in corporate finance and the theory of the firm. Under what conditions can managers exercise discretionary behavior? What kinds of rules, or mechanisms, can be designed to align the manager’s interest with the owner’s? Without effective rules, what actions will managers choose? An early application was the proposed “separation of ownership and control” in the modern corporation. Berle and Means (1932) argued that the modern firm is run not by its owners, the shareholders, but by salaried managers, whose interests are different from those of shareholders and include executive perks, prestige, and similar rewards. If the corporation is diffusely held, no individual shareholder has sufficient motivation to engage in (costly) monitoring of managerial decisions, and therefore discretion will flourish at the expense of the market value of the firm. However, Berle and Means did not consider how owners might limit this discretion *ex ante*, without the need for detailed *ex post* monitoring.

Owners of corporations (shareholders) use a variety of control or governance mechanisms to limit the managerial discretion described by Berle and Means. Both “internal” and “external” governance may be employed. Internally, owners may establish a board of directors to oversee the actions of managers. They can use performance-based compensation to motivate managers to act in the owners’ interest (for instance, giving managers stock options instead of cash bonuses). They can adopt a particular organizational form, such as the “M-form” structure, in which managerial discretion is more easily kept in check (Williamson, 1975). Finally, they can rely on competition within the firm for top-level management positions—what Fama (1980) calls the internal market for managers—to limit the discretionary behavior of top-level management.

Even more important are external forces that help align managers’ interests with those of shareholders.⁷ Competition in the product market, for example, assures that firms whose managers engage in too much discretionary behavior will fail, costing the managers their jobs. In

⁷ Jensen (1993) argues that internal control mechanisms have generally been weak and ineffective, while external control mechanisms—where allowed to function—are typically superior.

countries where universal banking is permitted, large equity holders such as banks can exercise considerable influence over managerial behavior. The external governance mechanism that has received the most attention, however, is the market for ownership itself, the market for corporate control, as described by Manne (1965). Manne responded to Berle and Means by noting that managerial discretion will be limited if there is an active market for control of corporations. When managers engage in discretionary behavior, the share price of the firm falls, and this invites takeover and subsequent replacement of incumbent management. Therefore while managers may hold considerable autonomy over the day-to-day operations of the firm, the stock market places strict limits on their behavior. Mises makes the same general point in *Human Action* (1949, pp. 303), arguing that the Berle–Means doctrine ignores the role of financial markets: “[T]he changes in the prices of common and preferred stock and of corporate bonds are the means applied by the capitalists for the supreme control of the flow of capital. The price structure as determined by the speculations on the capital and money markets and on the big commodity exchanges not only decides how much capital is available for the conduct of each corporation’s business; it creates a state of affairs to which the managers must adjust their operations in detail.” The market for corporate control thus places strict limits on the ability of managers to pursue their own goals rather than those of the capitalist–entrepreneurs.

However, there is much debate in the academic literature on the effectiveness of the takeover mechanism in providing managerial discipline.⁸ A common concern is the belief that financial markets produce too few disciplinary takeovers, due to a free-rider problem associated with tender offers (see, for example, Scharfstein, 1988). Critics point out that if the difference between the current (undervalued) price of the firm and its after-takeover market value is common knowledge, then the target firm’s shareholders will refuse to tender their shares until the current price is

⁸ For overviews of this literature see Romano, 1992, Shleifer and Vishny, 1997, Zingales, 1997, and Bittlingmayer, 1998.

bid up, appropriating a share of the returns to the acquiring firm. These critics conclude that regulation, not the takeover market, should be used to discipline managers.

The flaw in this argument is that it assumes perfect knowledge by investors. The typical shareholder will *not* usually have the same information as incumbent managers, outside “raiders,” and other specialists. It is not in the small shareholder’s interest to learn these details; that is why he delegates such responsibilities to the managers in the first place. As Hayek (1945) described it, there is a “division of knowledge” in society. The raider who discovers a difference between a firm’s current market value and its potential value under new management has an opportunity for an entrepreneurial profit (less the transaction costs of takeover). Because shareholders have delegated these responsibilities, they will not usually earn a share of this profit. Moreover, the post-takeover market value of the firm is uncertain; the raider’s profit, if he is successful, is the reward for bearing this uncertainty. In this sense the takeover artist is a Misesian capitalist–entrepreneur. Successful takeover specialists earn pure entrepreneurial profit; the rest earn entrepreneurial loss. Raiders thus have powerful incentives to undertake disciplinary restructurings, and this places strict limits on managerial discretion.

It is therefore difficult to attribute the poor long-term performance of acquisitions to managerial motives. Furthermore, the claim that the highly diversified, acquisitive firms of the 1960s and 1970s were inefficient is inconsistent with recent evidence finding that during those years, diversifying acquisitions tended to increase the market values of the acquiring firms (Matsusaka, 1993; Hubbard and Palia, 1999). Because of the event-study evidence, “[t]he simple view that the 1980s ‘bust-ups’ were a corrective to past managerial excesses is untenable” (Matsusaka, 1993, p. 376). In short, both theory and empirical evidence cast doubt on the conventional wisdom that corporate managers made systematic, predictable, mistakes by acquiring (often unrelated) subunits during the 1960s and 1970s, and that financial-market participants made systematic mistakes by approving these acquisitions.

2. Mergers, sell-offs, and efficiency: theory and evidence

Why, in general, do firms expand and diversify through merger? Why do they sometimes retreat and “refocus” through divestiture? In the perfectly competitive model, firms as such do not exist at all; the “firm” is a production function, its efficient output range and mix given by economies of scale and scope. Outside the textbook model, however, economies of scale and scope cannot explain the size and shape of the firm as *ownership structure*. Economies of scale, for example, imply that certain quantities of output can be produced more efficiently when they are produced together. But this does not explain why the joint production must take place in a single firm; absent transactional difficulties, two independent firms could simply contract to share the same plant or facility and jointly produce the efficient level of output (Teece, 1980, 1982).

Ronald Coase in his celebrated 1937 paper on “The Nature of the Firm” was the first to explain that the size of the firm depends not only on productive technology, but also on the costs of transacting business. In the Coasian framework, as developed and expanded by Williamson (1975, 1985, 1996) and others, the decision to organize transactions within the firm as opposed to on the open market—the “make-or-buy decision”—depends on the relative costs of internal versus external exchange. Use of the market mechanism entails certain costs: discovering the relevant prices, negotiating and enforcing contracts, and so on. Within the firm, the entrepreneur can possibly reduce such costs by coordinating these activities himself (though internal procurement will face its own informational and incentive problems as well). In short, the boundary of the firm depends on organizational, as well as productive, considerations.

In this sense, the theory of merger is a subset of the theory of the optimal size and shape of the firm, a relatively undeveloped area in the Austrian literature. A firm seeking to expand its activities, whether into new product lines or within existing ones, can do so either by internal growth or by acquiring another firm. Acquisition will be preferred if the firm believes it can buy and redeploy the assets of an existing firm more cheaply than it can purchase new capital equip-

ment and increase its current operations. In this sense, we can think of merger or takeover as a *response to a valuation discrepancy*: Acquisition occurs when the value of an existing firm's assets is greater to an outside party than to its current owners. Put differently, merger can be a response to economies of scope, in that the value of the merging firms' assets combined exceeds their joint values separately.⁹ As with any voluntary exchange, the transaction is (ex ante) advantageous to both parties, and should thus be welfare-enhancing. Such a valuation discrepancy typically exists because the buying firm believes that its management—or a new management team it installs—can operate the target firm more effectively than the target firm's incumbent management. Hence we can also think of mergers as a *form of monitoring institution*: Takeover, or the threat of it, is a disciplinary device that constrains the managers of a firm. If managers fail to maintain the market value of the firm, creating such a valuation discrepancy, new owners will quickly arrive and replace them.

Mergers and acquisitions can take a variety of forms. An acquiring firm can try to reach a merger agreement directly with the management and board of directors of a target firm, paying with cash or its own stock, and then submitting the agreement to shareholders for ratification. Or it may appeal directly to the target firm's shareholders, asking them to “tender” their shares at a stated price. In either case a new, larger entity will be formed, combining the two initial firms under single ownership. Corporations can be restructured in other ways as well: Under a leveraged buyout or other “going-private” transaction, a group of investors, often including incumbent management, buys out the firm's equity and replaces it with debt, often high-yield (“junk”)

⁹ Two popular explanations for multi-product economies of scope center on internal capital markets and strategic resources. According to the internal-capital-markets hypothesis, as expressed by Alchian (1969), Williamson (1975), Gertner, Scharfstein, and Stein (1994), and Stein (1997), internal capital markets have advantages where access to external funds is limited. The central office of the diversified firm can use informational advantages, residual control rights, and its ability to intervene selectively in divisional affairs to allocate resources within the firm better than the external capital markets would do if the divisions were standalone firms. In the resource-based view, the firm is regarded as a stock of knowledge, establishing a range of competence that may extend across multiple product lines. Excess profits or supranormal returns are seen as rents accruing to unique factors of production (Montgomery and Wernerfelt, 1988), and firms diversify because they have excess capacity in these unique factors.

bonds. This class of transactions, like proxy contests and share repurchases, establishes a new ownership arrangement without necessarily affecting the physical assets of the firm. Additionally, spinoffs and divestitures can be used to break large firms into smaller pieces.

New combinations of corporate assets can generate efficiencies by replacing poorly performing managers (Mitchell and Lehn, 1990; Jensen and Ruback, 1983), creating operating synergies (Weston, Chung, and Hoag, 1990, pp. 194–95), or establishing internal capital markets (Alchian, 1969; Williamson, 1975; Gertner, Scharfstein, and Stein, 1994; Stein, 1997). In particular, considerable evidence suggests that the market for corporate control disciplines incumbent management. For example, Morck, Shleifer, and Vishny (1988) found that firms with lower Tobin's q -ratios are more likely to be targets of takeovers. Tobin's q measures the ratio of the firm's market value to the replacement cost (or book value) of its assets. Because firms with low market-to-book ratios have low expected cash flows relative to the amount of invested capital, the market-to-book ratio can be interpreted as a measure of the firm's investment opportunities (Smith and Watts, 1992; Gaver and Gaver, 1993), or as a measure of managerial inefficiency or agency conflict within the firm (Lang, Stulz, and Walkling, 1991). Low- q firms are the most likely takeover targets.

Given the benefits of takeovers and other restructurings, why are many mergers later “reversed” in a divestiture or spin-off? Here we distinguish between two basic views. The first, which we term *empire building*, holds that entrenched managers make acquisitions, often paying with the acquiring firm's (inflated) stock, primarily to increase their own power, prestige or control. These acquisitions produce negligible efficiency gains, and are thus more likely to be divested ex post. Most important, because the acquiring firm's motives are suspect, such acquisitions are ex ante inefficient; neutral observers can predict, based on pre-merger characteristics, that they are unlikely to be viable over time. By permitting these acquisitions, capital-market participants are also guilty of systematic error. Admittedly, in the empire-building view, markets

did eventually correct these mistakes with the restructurings of the 1980s.¹⁰ Still, farsighted regulators could have reduced social costs by limiting such acquisitions in the first place.

We term the second view *market process* or *experimentation*. This view acknowledges that unprofitable acquisitions may be mistakes ex post, but argues that poor long-term performance does not indicate ex ante inefficiency. In the most basic market-process perspective, a divestiture of previously acquired assets may mean simply that profit-seeking entrepreneurs are reacting to new information, unavailable at the time of acquisition, or otherwise learning from experience. In neither case should the original acquisitions be regarded as ex ante errors.¹¹ Another possibility is that firms making poorly performing acquisitions are led by genuinely bad managers, who are later disciplined or removed, their mistakes being undone through divestitures. Financial-market participants, unsure of these managers' abilities, may have approved the original acquisitions; as information about managerial ability was revealed, however, they revised their expectations and removed the incompetent managers. Again, no ex ante inefficiency is implied.

A more specific market-process approach sees acquisition as a form of experimentation. Profit-seeking entrepreneurs, as in Matsusaka (1997) and Boot, Milbourn, and Thakor (1998), can only learn their own capabilities by trying various combinations of activities, which could include diversifying into new industries. Firms may thus make diversifying acquisitions even if they know these acquisitions are likely to fail. The failure itself generates useful information, and thus the acquisition strategy may be successful even if individual acquisitions are not. In these

¹⁰ This raises the question of why, if managers were sufficiently entrenched to make inefficient acquisitions in the first place, would they not remain sufficiently entrenched to hold on to poorly performing targets, rather than divest them and risk revealing their underlying objectives? Boot (1992, p. 1402) argues that an entrenched manager will not divest because the external market will take divestiture as an admission of failure and a bad signal of his ability. The argument that divestitures indicate agency problems thus assumes a change in corporate control between the original acquisitions and the later divestitures.

¹¹ Compare Mises (1957, p. 268): "To make mistakes in pursuing one's ends is a widespread human weakness. . . . Error, inefficiency, and failure must not be confused with irrationality. He who shoots wants, as a rule, to hit the mark. If he misses it, he is not 'irrational'; he is a poor marksman." Of course, as Kirzner (1978, pp. 58–59) points out, this is not a uniquely Austrian position. A more typical interpretation would be that agents always maximize subject to informational constraints.

cases, the long-term viability of an acquisition may be systematically related to publicly observable, pre-merger characteristics. However, regulatory restrictions on such acquisitions would be undesirable, and indeed harmful, as they retard the process of market learning.

To explain the particular pattern of mergers and acquisitions observed in the 1960s, 1970s, and 1980s, market-process explanations must introduce changes in the legal, political, competitive, or regulatory environments across these years. In other words, why was it more difficult for entrepreneurs to forecast—based on their own *Verstehen* as well as generally available information—the success of acquisitions in the 1960s and 1970s? Why did entrepreneurs feel a greater need to experiment with various combinations of businesses during the 1960s and 1970s?

A likely candidate is the SEC's deregulation of brokerage houses in 1975 and the subsequent end of fixed-price commissions. The investment community in the 1960s has been described as a small, close-knit group where competition was minimal and peer influence strong (Bernstein, 1992). As Bhidé (1990, p. 76) puts it, "internal capital markets . . . may well have possessed a significant edge because the external markets were not highly developed. In those days, one's success on Wall Street reportedly depended far more on personal connections than analytical prowess." During that period the financial markets were relatively poor sources of capital. The effect of deregulation, not surprisingly, was to increase competition among providers of investment services. "This competitive process has resulted in a significant increase in the ability of our external capital markets to monitor corporate performance and allocate resources" (Bhidé, 1990, p. 77). As the cost of external finance has fallen, firms have tended to rely less on internal finance, and thus the value added from internal capital market allocation has fallen.

3. Are divestitures predictable? Evidence from a duration study

This section summarizes our own research (Klein and Klein, 1999) on the causes of divestiture. If acquisitions are most often symptoms of managerial empire-building, as suggested by Ravenscraft and Scherer (1987), Porter (1987), and other critics, then pre-merger characteristics

associated with high levels of managerial discretion should be systematically related to the long-term failure and reversal of these acquisitions. In the market-process view, by contrast, long-term performance should be correlated only with pre-merger characteristics associated with experimentation, rapidly changing environments, or knowledge-intensive industries. Our empirical research finds little support for the empire-building hypothesis, and much stronger support for the market-process view.

To evaluate competing claims about divestitures, we assembled a sample of mergers and tracked them through time. We began with a sample of 327 pairs of firms that merged during the 1977–83 period. The initial sample was extracted from the Exit List of the NBER Manufacturing Sector Master File, a panel of 2,726 publicly traded, U.S. manufacturing firms that includes variables from the complete income statement, balance sheet, and information on the market value of common stock. The Exit List records all firms that exited from the 1991 version of the Manufacturing Sector Master File, providing detailed reasons for each exit. From the Exit List we compiled the names of all firms that exited the file because they merged with, or were acquired by, another publicly traded firm.

We then traced this initial sample of mergers through July 1995, to see which merged pairs were still intact. We searched the *Wall Street Journal Index* for divestiture announcements, using the date the item first appeared in the *WSJ* as the effective divestiture date. The date of the initial merger was obtained similarly. Of our 327 mergers, three were forced to split by the Federal Trade Commission; because those divestitures were involuntary, we cannot draw inferences about their underlying economic causes, and we therefore deleted them from the sample.¹² We also deleted four mergers that were not completed by 1983. Of the remaining 320 pairs of firms, we were able to obtain necessary balance-sheet, market-value, and method-of-payment information for 222 pairs. This left us with a sample of 222 mergers, with data on pre-merger characteris-

¹² These forced divestitures were very costly for the firms involved. For example, in addition to ruling in 1980 that Beatrice Foods Company must divest itself of Tropicana Products because of antitrust violations in the 1978 acquisition, the FTC also ordered Beatrice to pay all of its Tropicana profits to the U.S. Treasury.

tics of both acquirer and target, and information on the duration of the merger through July 1995. Of the 222 acquisitions, 64, or almost 30 percent, had been divested by July 1995.

We used a duration or “hazard” model to study the effects of pre-merger characteristics on the time to divestiture. These models, first developed by D.R. Cox in 1972 for use in biomedical research, are used for explaining the length of time until some discrete event happens. More specifically, they help explain how exogenous factors, unobserved factors, and time itself affect the average duration until the occurrence of the event. In our study the discrete event is divestiture. Potential exogenous factors are outlined below. Duration analysis allows us to see, historically, how characteristics of the acquiring and acquired firms affect the likelihood that the acquired firm will later be divested. Unlike probability models such as probit and logit, duration models incorporate information on the timing of the discrete event under investigation. In other words, they allow us to see how the probability of divestiture changes with the existing duration of any particular merger.¹³

To study the effect of pre-merger characteristics on average merger duration, we estimated a hazard regression of duration (measured as the natural logarithm of the number of days) on a constant and a series of potentially exogenous factors. These factors help us distinguish between empire-building and market-process explanations for mergers. Consider each in turn.

Empire building. The empire-building hypothesis suggests several characteristics associated with high levels of managerial discretion. We include three in our regressions.

(1) Relatedness of target and acquirer. Managers of firms in one industry may have particular problems evaluating potential targets in other industries, and may have special difficulties integrating those targets into their firm’s existing operations. However, several commentators hold that managers deliberately pursue unrelated targets to expand their control or make themselves

¹³ Because we have the exact dates of each merger announcement (the beginning of the spell) and each divestiture announcement (the end of the spell), for those mergers that are divested by August 1, 1995, we estimate a “point hazard” model. Because some firms do not divest at all by the end of our period, the sample is truncated; the observations for those mergers that remain intact by the end of the period are considered “right-censored.” An advantage of the hazard model is that the estimation procedure easily accommodates right-censored observations.

more valuable to the firm. As discussed above, this view is based partly on evidence from studies of the conglomerate period by Rumelt (1974, 1982), Ravenscraft and Scherer (1987), Kaplan and Weisbach (1992), and others who find no evidence that unrelated diversification brought long-term benefits to the firms that diversified.¹⁴ Combined with more recent evidence of negative stock-market returns to diversification during the 1980s (Berger and Ofek, 1995; Bhagat, Shleifer, and Vishny, 1990; Lang and Stulz, 1994; Comment and Jarrell, 1995), many observers conclude that unrelated diversification is per se inefficient, and that the conglomerate era is best understood as an agency phenomenon. If so, then conglomerate or unrelated acquisitions should fail at a higher rate than non-conglomerate or related acquisitions. Following Kaplan and Weisbach (1992), we examined this claim by constructing a dummy variable equal to one if the acquiring and target firm share at least one 2-digit SIC code and zero otherwise.

(2) Differences in price-earnings ratios. Merger critics have often suggested that acquiring firms grow and prosper by “bootstrapping.” This refers to the practice whereby bidding firms seek targets with low P/E ratios to boost their reported earnings per share (the “window dressing” motive for merger). It is trivially mathematically true that when a firm with a high P/E multiple acquires a firm with a low P/E multiple and pays with its own stock, the acquirer’s earnings per share will rise, simply because the combined earnings of the two firms will then be divided by a smaller number of total shares outstanding. Hence, it is argued, acquiring firms can expand rapidly, with market approval, as managers exploit this accounting opportunity.¹⁵

¹⁴ Servaes (1996) also finds that conglomerate firms in the 1960s were valued at a discount relative to specialized firms. However, Matsusaka (1993) and Hubbard and Palia (1999) show that market participants generally rewarded conglomerate acquisitions during this period, and Klein (1998) offers valuation evidence consistent with the event-study results.

¹⁵ This is Malkiel’s (1990, p. 58) explanation for the conglomerate boom: “[T]he major impetus for the conglomerate wave of the 1960s was that the acquisition process itself could be made to produce growth in earnings per share. . . . By an easy bit of legerdemain, [conglomerate managers] could put together a group of companies with no basic potential at all and produce steadily rising per-share earnings.” For a more balanced discussion of the bootstrapping practice see Lynch, 1971, pp. 55–56.

The problem with this argument is that it assumes market participants could be systematically fooled by a simple algebraic trick. Admittedly, much more complicated financial and balance-sheet manipulations are often used in corporate-control transactions: bidders in the 1960s and 1970s sometimes financed acquisitions with convertible bonds, convertible preferred stocks, and other unique instruments. Although investors could (and eventually did) require that earnings be reported on a “fully diluted” basis, to take account of these manipulations, Malkiel (1990, p. 61) reports that “most investors in the middle 1960s ignored such niceties and were satisfied only to see steadily and rapidly rising earnings.” However, there is no evidence that bootstrapping was either prevalent or successful. Barber, Palmer, and Wallace (1995) examined the 1965–69 period and found that targets of conglomerate acquisitions did not have significantly lower P/E ratios than non-targets. Matsusaka (1993) compared the returns to bidding firms that pursued low-P/E targets with the returns to other bidders. For the period 1968–74, he found that high-P/E buyers of low-P/E targets made negative returns, on average, while other buyers earned positive returns.

Nonetheless, we included a measure of relative P/E ratios to see if acquirers that choose targets with lower P/E ratios are historically more likely to divest those same targets. This would suggest that bootstrapping does tend to fool investors, as increases in reported earnings disguise inefficient acquisitions. We calculated P/E ratios for all targets and acquirers and included a dummy variable, taking a value of one if the target’s P/E ratio was lower than the acquirer’s and zero otherwise, in our regressions.

(3) The medium of payment used in the merger. Several theories suggest that how an acquisition is financed can affect performance. First, the bootstrapping technique described above works only for mergers financed by stock swap. Second, Jensen (1986) holds that financing takeovers by issuing debt serves to discipline acquiring firm management by removing some post-merger discretion in the use of excess cash. Firms with high debt loads, Jensen argues, are likely to be well managed. If true, we would expect entrenched managers to avoid making acquisitions using

debt, opting for stock swaps instead.¹⁶ We measure the effects of the medium of payment on the probability of divestiture using a series of dummy variables to indicate whether the merger was financed entirely with cash, with stock, with debt, a combination of debt and securities, or another method.

Market process or experimentation. In the market-process or experimentation view, divestitures occur when the acquirer learns new information about the target after the merger has taken place. Plausibly, some relevant characteristics of potential target firms can be learned only by experience. Under what circumstances is this most likely? We selected five observable characteristics as proxies.

(1) Size of the target firm. Large firms, by their very nature, engage in more activities than smaller firms, so potential acquirers have more to learn. On the other hand, smaller firms are less likely to have been written about in the business press, so one could plausibly argue that private information is a bigger problem for small targets. However, in our sample all targets are themselves publicly traded corporations, so lack of media exposure is unlikely to be a problem.

(2) Target industry. Firms in rapidly changing, knowledge-intensive industries are likely to have characteristics hidden from potential acquirers. To capture this effect, we created a dummy variable based on 2-digit SIC codes. The dummy takes a value of one if the target is in any of the following industries: computers (systems, software, and services), medical products, communications (including telephones and other communications equipment), aerospace, and miscellaneous high-tech industries. Otherwise, the dummy takes a value of zero.

(3) Target R&D. Firms in R&D-intensive industries are likely to have hidden characteristics, because R&D is difficult to value, especially to outsiders. Potential acquirers would know poten-

¹⁶ Amihud, Lev, and Travlos (1990) found that managers with relatively large stock holdings in their firms were reluctant to dilute their holdings and risk the loss of control by acquiring targets with new stock issues. They also show that abnormal negative returns are associated with mergers where the acquiring firm has relatively low managerial ownership, but not when the acquiring firm has higher managerial ownership. If managers have a substantial share in the ownership of their firm, then profit maximization would direct their behavior and agency problems would be diminished. Cash (or debt) financed acquisitions may therefore be more likely to be value-enhancing than those financed with equity.

tial targets' R&D expenditures (which is reported), but this may not give the acquirer much information on the quality of the research or even the content of the R&D. Still, reported R&D expenditure is the best available proxy for the firm's level of research activity. We thus included the target's R&D expenditure, scaled by firm size, as an exogenous variable.

(4) Relatedness of target and acquirer. Unrelated acquisitions, as discussed above, may be a form of experimentation, as firms try new combinations of activities to find those that best fit their existing capabilities. Although match-seeking acquisitions are more likely to fail, *ex post*, they can still be part of a value-maximizing acquisition strategy. Our relatedness variable, described above, can proxy for match-seeking behavior.

(5) Match seeking. The best way to identify match-seeking firms is to look directly at historical patterns of acquisitions and divestitures. A firm with a history of repeated acquisitions and divestitures, especially acquisitions into unrelated industries, is likely to be a match seeker, and thus any current acquisition is more likely to be divested. Unfortunately, our merger sample is too small to compile detailed acquisition and divestiture histories on individual acquirers. As a first approximation, we searched our sample for acquiring firms with at least one previous acquisition that was later divested with a few years of the acquisition. We created a dummy variable equal to one if the acquirer in a particular merger met these criteria, and zero otherwise.

As noted above, periods of intense merger activity in particular industries may be responses to industry-specific competitive or regulatory shocks. Mitchell and Mulherin (1996) and Andrade and Stafford (1997) argue that mergers tend to occur in industry clusters, suggesting that industry-specific factors are important. Mitchell and Mulherin argue that corporate takeovers are often the most cost-effective way for industries to respond to these shocks. Moreover, they add, "because takeovers are driven in part by industry shocks, it is not surprising that many firms exhibit volatile performance following takeovers, with actual failures following some negative shocks" (Mitchell and Mulherin, 1996, p. 195).

To capture the effects of industry-specific shocks such as regulatory and tax changes, we included measures of industry clustering, both for acquirers and one for targets, in our regressions. We did find substantial clustering in our sample. For example, slightly more than half of the mergers during 1977–83 period occurred in only five of the 37 (2-digit) SIC industries in our sample, both for acquirers and targets, with three-quarters occurring in ten industries. We constructed clustering variables by counting the number of mergers in each 2-digit SIC category in each year and creating variables for each merger corresponding to the number of mergers occurring (a) within one year of the merger under observation (including the year before the merger, the year of the merger, and the year after the merger, to span a three-year window), (b) within two years of the merger (a five-year window), and (c) within the entire sample (a seven-year window). If risky acquisitions or increased levels of experimentation tend to appear during periods of industry-specific shocks, then these clustering variables will have negative and significant effects on the length of time to divestiture.¹⁷

As additional control variables, we also added in our regressions other factors mentioned in the literature on divestitures. These include the target's pre-merger profits, acquirer and target q ratios, and target and acquirer leverage.

Our results challenge the empire-building hypothesis and offer evidence more consistent with the market-process view. Of the variables associated with agency problems, only relatedness has a statistically significant effect on merger duration. Neither P/E differences nor the medium of payment has a statistically significant coefficient in any of several specifications. The coefficient on relatedness is positive, meaning that related acquisitions are less likely, on average, to be divested (as in Kaplan and Weisbach, 1992). However, the coefficient on relatedness is also consistent with experimentation. Of the five variables associated with the market-process or

¹⁷ Our study includes only mergers and acquisitions that were actually consummated. Mitchell and Mulherin (1996) include further takeover activity such as unsuccessful takeover attempts and defensive asset restructurings. Such activity clustered by industry in a certain period would also indicate an industry-specific shock. Unfortunately, we do not have reliable information on unsuccessful merger attempts.

experimentation view, the coefficient on relatedness is positive and significant, the coefficient on target R&D is negative and significant, and the coefficient on the match-seeking indicator is negative and significant, all as expected. The coefficients on target size and the indicator for high-technology industries have the expected signs (positive and negative, respectively) but are not statistically significant.

Overall, the results suggest that the divestitures in our sample are not, on average, the predictable result of unwise acquisitions. Rather, divestitures follow experimentation and learning, healthy characteristics of a market economy. Moreover, industry clustering does appear to have a regular effect on average merger duration. The coefficients on our acquirer clustering variables are consistently negative and statistically significant. (The coefficients on the target clustering variables, by contrast, are not statistically significant.) This suggests that volatile performance does follow shocks, as suggested by Mitchell and Mulherin (1996).

This finding is consistent with the view that firms make acquisitions when faced with increased uncertainty (see Spulber, 1992, pp. 557–59). Regulatory interference could be a major cause of such uncertainty. As discussed above, government intervention makes economic calculation more difficult, and can ultimately render calculation impossible. When faced with increased regulatory interference, firms apparently respond by experimenting, making riskier acquisitions, and consequently making more mistakes, *ex post*. Unprofitable acquisitions tend to come in industry clusters, and these clusters are unlikely to arise without an industry-specific cause, such as intensified regulation.

4. Conclusions

Do entrepreneurs make predictable mistakes? Theory and evidence suggest otherwise. Contrary to the conventional wisdom on mergers and sell-offs, divestitures of previously acquired assets do not indicate that the original acquisitions were failures. Indeed, empire-building motives do not seem to be systematically related to long-term merger success. Instead, divestitures

are more likely to be associated with experimentation, learning, and other socially beneficial activities. Regulation designed to curb these activities will thus be particularly harmful.

Corporate acquisitions are uncertain endeavors, and the capitalist-entrepreneur—along with the manager to whom he delegates authority—is a speculator. If the consequences of his actions were determinate, he would not be an entrepreneur, but rather, as some economic theories seem to treat him, “a soulless automaton” (Mises, 1949, p. 585). However, the future can never be known with certainty; long-term profit and loss cannot be predicted based on publicly available information. As Mises (p. 585) explains: “What distinguishes the successful entrepreneur and promoter from other people is precisely the fact that he does not let himself be guided by what was and is, but arranges his affairs on the ground of his opinion about the future. He sees the past and the present as other people do; but he judges the future in a different way.” Unfortunately regulators, and many analysts, fail to appreciate this point.

5. References

- Alchian, Armen A. 1969. “Corporate Management and Property Rights.” In Henry Manne, ed., *Economic Policy and the Regulation of Corporate Securities*, pp. 337–60. Washington, D.C.: American Enterprise Institute.
- Amihud, Yakov, Baruch Lev, and Nickolaos G. Travlos. 1990. “Corporate Control and the Choice of Investment Financing: The Case of Corporate Acquisitions.” *Journal of Finance* 45, no. 2: 603–16.
- Andrade, Gregor, and Erik Stafford. 1997. “Investigating the Characteristics and Determinants of Mergers and Other Forms of Investment.” Working paper, Graduate School of Business, University of Chicago.
- Barber, Brad M., Donald Palmer, and James Wallace. 1995. “Determinants of Conglomerate and Predatory Acquisitions: Evidence from the 1960s.” *Journal of Corporate Finance: Contracting, Governance and Organization* 1 (April): 283–318.
- Berger, Allen N., Rebecca S. Demsetz, and Philip E. Strahan. 1999. “The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future.” *Journal of Banking and Finance* 23 (February): 135–94.
- Berger, Philip G., and Eli Ofek. 1995. “Diversification’s Effect on Firm Value.” *Journal of Financial Economics* 37 (January): 39–65.

- Berger, Philip G., Eli Ofek, and David L. Yermack. 1997. "Managerial Entrenchment and Capital Structure Decisions." *Journal of Finance* 52 (September): 1411–38 .
- Berle, Adolph A., and Gardiner C. Means. 1932. *The Modern Corporation and Private Property*. New York: Macmillan.
- Bernstein, Peter L. 1992. *Capital Ideas: The Improbable Origins of Modern Wall Street*. New York: Free Press.
- Bhagat, Sanjai, Andrei Shleifer, and Robert W. Vishny. 1990. "Hostile Takeovers in the 1980s: The Return to Corporate Specialization." *Brookings Papers on Economic Activity: Microeconomics*: 1–72.
- Bhide, Amar. 1990. "Reversing Corporate Diversification." *Journal of Applied Corporate Finance* 3 (Summer): 70–81.
- Bittlingmayer, George. 1998. "The Market for Corporate Control (Including Takeovers)." In Boudewin Bouckaert and Gerrit De Geest, eds., *Encyclopedia of Law and Economics* (Aldershot, U.K.: Edward Elgar, forthcoming).
- Boot, Arnoud W. A. 1992. "Why Hang on to Losers? Divestitures and Takeovers." *Journal of Finance* 48, no. 4: 1401–23.
- Boot, Arnoud W. A., Todd T. Milbourn, and Anjan V. Thakor. 1998. "Expansion of Banking Scale and Scope: Don't Banks Know the Value of Focus?" Working paper, London Business School.
- Coase, Ronald H. 1937. "The Nature of the Firm." In idem., *The Firm, the Market, and the Law*. Chicago: University of Chicago Press, pp. 33–55.
- Comment, Robert, and Gregg A. Jarrell. 1995. "Corporate Focus and Stock Returns." *Journal of Financial Economics* 37 (January): 67–87.
- Comment, Robert, and William G. Schwert. 1995. "Poison or Placebo? Evidence on the Deterrence and Wealth Effects of Modern Antitakeover Measures." *Journal of Financial Economics* 39: 3–43.
- Cox, D. R. 1972. "Regression Models and Life-Tables." *Journal of the Royal Statistical Society* 34 (May–August): 187–220.
- Edlin, Aaron S., and Joseph E. Stiglitz. 1985. "Discouraging Rivals: Managerial Rent-Seeking and Economic Inefficiencies." *American Economic Review* 85 (December): 1301–12.
- Fama, Eugene F. 1980. "Agency Problems and the Theory of the Firm." *Journal of Political Economy* 88, 288–307.
- Foss, Nicolai J., ed. 1997. *Resources, Firms, and Strategy: A Reader in the Resource-Based Approach*. Oxford: Oxford University Press.

- Gaver, Jennifer J., and Kenneth M. Gaver. 1993. "Additional Evidence on the Association Between the Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies." *Journal of Accounting and Economics* 16: 125–60.
- Gertner, Robert H, David S. Scharfstein, and Jeremy C. Stein. 1994. "Internal Versus External Capital Markets." *Quarterly Journal of Economics* 109: 1211–30.
- Hayek, F. A. 1945. "The Use of Knowledge in Society." In idem., *Individualism and Economic Order*. London: Routledge and Kegan Paul, pp. 77–91.
- High, Jack. 1984-85. "Bork's Paradox: Static vs. Dynamic Efficiency in Antitrust Analysis." *Contemporary Policy Issues* 3: 21-34.
- Hubbard, R. Glenn, and Darius A. Palia. 1999. "A Reexamination of the Conglomerate Merger Wave in the 1960s: An Internal Capital Markets View." *Journal of Finance*, forthcoming.
- Hülsmann, Jorg Guido. 1998. "Toward a General Theory of Error Cycles." *Quarterly Journal of Austrian Economics* 1, no. 4 (Winter): 1–23.
- Jarrell, Gregg A., and Annette Poulsen. 1987. "Shark Repellants and Stock Prices: The Effects of Antitakeover Amendments Since 1980." *Journal of Financial Economics* 19: 127–68.
- Jarrell, Gregg A., James A. Brickley, and Jeffrey M. Netter. 1988. "The Market for Corporate Control: The Empirical Evidence Since 1980." *Journal of Economic Perspectives* 2 (Winter): 49–68.
- Jensen, Michael C. 1986. "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers." *American Economic Review* 76,: 323–29.
- Jensen, Michael C. 1988. "Takeovers: Their Causes and Consequences." *Journal of Economic Perspectives* 2, no. 1: 21-48.
- Jensen, Michael C. 1989. "Eclipse of the Public Corporation." *Harvard Business Review* (September–October).
- Jensen, Michael C. 1991. "Corporate Control and the Politics of Finance." *Journal of Applied Corporate Finance* 6: 13–33.
- Jensen, Michael C. 1993. "The Modern Industrial Revolution, Exit, And the Failure of Internal Control Systems." *Journal of Finance* 48 (July): 831–80.
- Jensen, Michael C., and Richard S. Ruback. 1983. "The Market for Corporate Control: The Scientific Evidence." *Journal of Financial Economics* 11 (April): 5–50.
- Kaplan, Steven N., and Michael S. Weisbach. 1992. "The Success of Acquisitions: Evidence from Divestitures." *Journal of Finance* 47 (March): 107–38.

- Kirzner, Israel M. 1978. "Economics and Error." In Louis A. Spadaro, ed., *New Directions in Austrian Economics*, pp. 57–76. Kansas City: Sheed Andrews and McMeel.
- Klein, Peter G. 1998. "Were the Acquisitive Conglomerates Inefficient? A Reconsideration." Working paper, Department of Economics, University of Georgia.
- Klein, Peter G. 1999. "Entrepreneurship and Corporate Governance." *Quarterly Journal of Austrian Economics*, 2, no. 2 (Summer): 19–42.
- Klein, Peter G., and Sandra K. Klein. 1999. "Are Divestitures Predictable? A Duration Analysis." Working paper, Department of Economics, University of Georgia.
- Knight, Frank H. 1921. *Risk, Uncertainty, and Profit*. New York: Hart, Schaffner & Marx.
- Lang, Larry H. P., and René M. Stulz. 1994. "Tobin's Q , Corporate Diversification, and Firm Performance." *Journal of Political Economy* 102 (December): 1248–80.
- Lang, Larry H. P., René M. Stulz, and Ralph Walkling. 1991. "A Test of the Free Cash Flow Hypothesis: The Case of Bidder Returns." *Journal of Financial Economics* 28: 315–35.
- Lynch, Harry H. 1971. *Financial Performance of Conglomerates*. Boston: Harvard University Press.
- Malkiel, Burton G. 1990. *A Random Walk Down Wall Street*. New York and London: W. W. Norton.
- Manne, Henry G. 1965. "Mergers and the Market for Corporate Control." *Journal of Political Economy* 73 (April): 110–20.
- Matusaka, John G. 1993. "Takeover Motives during the Conglomerate Merger Wave." *Rand Journal of Economics* 24 (Autumn): 357–79.
- Matusaka, John G. 1997. "Corporate Diversification, Value Maximization, and Organizational Capabilities." Working paper, Marshall School of Business, University of Southern California.
- Mises, Ludwig von. 1920. "Economic Calculation in the Socialist Commonwealth." Trans. S. Adler. Auburn, Ala.: Ludwig von Mises Institute, 1990.
- Mises, Ludwig von. 1951. "Profit and Loss." In idem., *Planning for Freedom*. Fourth edition. Spring Mills, Pa.: Libertarian Press, 1980, pp. 108–50.
- Mises, Ludwig von. 1949. *Human Action: A Treatise on Economics*. Third revised edition. Chicago: Henry Regnery, 1966.
- Mises, Ludwig von. 1957. *Theory and History: An Interpretation of Social and Economic Evolution*. Auburn, Ala.: Mises Institute, 1985.
- Mitchell, Mark L., and Kenneth Lehn. 1990. "Do Bad Bidders Become Good Targets?" *Journal of Political Economy* 98, no. 2: 372–98.

- Mitchell, Mark, and J. Harold Mulherin. 1996. "The Impact of Industry Shocks on Takeover and Restructuring Activity." *Journal of Financial Economics* 41 (June): 193–229.
- Montgomery, Cynthia A., and Birger Wernerfelt. 1988. "Diversification, Ricardian Rents, and Tobin's q ." *Rand Journal of Economics* 19, no. 4: 623–32.
- Morck, Randall, Andrei Shleifer, and Robert W. Vishny. 1988. "Management Ownership and Market Valuation: An Empirical Analysis." *Journal of Financial Economics* 20 (January–March): 293–315.
- Morck, Randall, Andrei Shleifer, and Robert W. Vishny. 1990. "Do Managerial Objectives Drive Bad Acquisitions?" *Journal of Finance* 45 (March): 31–48.
- Nelson, Richard R., and Sidney G. Winter. 1982. *An Evolutionary Theory of Economic Change*. Cambridge, Mass.: Harvard University Press.
- Penrose, Edith. 1959. *The Theory of the Growth of the Firm*. New York: John Wiley & Sons.
- Porter, Michael E. 1987. "From Competitive Advantage to Corporate Strategy." *Harvard Business Review* (May–June): 43–59.
- Ravenscraft, David, and F. M. Scherer. 1987. *Mergers, Sell-Offs, and Economic Efficiency*. Washington, D.C.: Brookings Institution.
- Roll, Richard. 1988. "Empirical Evidence on Takeover Activity and Shareholder Wealth." In John C. Coffee, Jr., Louis Lowenstein, and Susan Rose-Ackerman, eds., *Knights, Raiders, and Targets: the Impact of the Hostile Takeover*, pp. 241–52. New York: Oxford University Press.
- Romano, Roberta. 1992. "A Guide to Takeovers: Theory, Evidence, and Regulation." *Yale Journal on Regulation* 9: 119–80.
- Rothbard, Murray N. 1962. *Man, Economy, and State: A Treatise on Economic Principles*. Auburn, Ala.: Ludwig von Mises Institute, 1993.
- Rumelt, Richard P. 1974. *Strategy, Structure and Economic Performance*. Boston: Graduate School of Business Administration, Harvard University.
- Rumelt, Richard P. 1982. "Diversification Strategy and Profitability." *Strategic Management Journal* 3 (October): 359–69.
- Scharfstein, David. 1988. "The Disciplinary Role of Takeovers." *Review of Economic Studies* 55 (April): 185–99.
- Servaes, Henri. 1996. "The Value of Diversification during the Conglomerate Merger Wave." *Journal of Finance* 51 (September): 1201–25.
- Shleifer, Andrei, and Robert W. Vishny. 1989. "Management Entrenchment: The Case of Manager-Specific Investments." *Journal of Financial Economics* 25 (November): 123–39.

- Shleifer, Andrei, and Robert W. Vishny. 1991. "Takeovers in the '60s and '80s: Evidence and Implications." *Strategic Management Journal* 12 (Winter): 51–59.
- Shleifer, Andrei, and Robert W. Vishny. 1997. "A Survey of Corporate Governance." *Journal of Finance* 52, no. 2 (June): 737–83.
- Smith, Clifford W., Jr., and Ross L. Watts. 1992. "The Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies." *Journal of Financial Economics* 32: 263–92.
- Spulber, Daniel F. 1992. "Economic Analysis and Management Strategy: A Survey." *Journal of Economics and Management Strategy* 1, no. 3 (Fall): 535–74.
- Stein, Jeremy C. 1997. "Internal Capital Markets and the Competition for Corporate Resources." *Journal of Finance* 52, no. 1 (March): 111–33.
- Teece, David J. 1980. "Economies of Scope and the Scope of the Enterprise." *Journal of Economic Behavior and Organization* 1, no. 3: 223–47.
- Teece, David J. 1982. "Towards an Economic Theory of the Multi-Product Firm." *Journal of Economic Behavior and Organization* 3: 39–64.
- Wernerfelt, Birger. 1984. "A Resource-Based View of the Firm." *Strategic Management Journal* 5: 171–80.
- Weston, J. Fred. 1989. "Divestitures: Mistakes or Learning." *Journal of Applied Corporate Finance* 2: 68–76.
- Weston, J. Fred, Kwang S. Chung, and Susan E. Hoag. 1990. *Mergers, Restructuring, and Corporate Control*, Englewood Cliffs, N.J.: Prentice-Hall.
- Williamson, Oliver E. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press.
- Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism*. New York: Free Press.
- Williamson, Oliver E. 1996. *The Mechanisms of Governance*. New York: Oxford University Press.
- Zingales, Luigi. 1997. "Corporate Governance." Forthcoming in *The New Palgrave Dictionary of Law and Economics*.