

Financial Commitment and Economic Performance: Ownership and Control in the American Industrial Corporation*

William Lazonick
Barnard College, Columbia University

Owners, Managers, and Value Creation

Economic orthodoxy has it that the publicly-traded corporate enterprise should be run for the benefit of the shareholders. What is good for the shareholders is supposed to be good for the economy as a whole. Companies that can yield shareholders higher returns on investment are supposed to be companies that are "maximizing value" [10, 17].

According to this conventional perspective, a firm falls short of its value-maximizing potential when it fails to yield a return to its shareholders that, adjusting for risk, is in line with alternative portfolio opportunities. To blame are the firm's managers, the "agents" to whom the shareholders as the firm's so-called "principals" have entrusted their capital. Managers have somehow or other been able to neglect shareholders' interests, shirking their proper duties and perhaps enriching themselves at the expense of the firm. To get managers to mend their ways, shareholders should use what has come to be called "the market for corporate control" as a disciplinary device to threaten managers with loss of the power to allocate the firm's resources. If need be, shareholders can use the market for corporate control to oust current management. The corporate raid and the hostile takeover, so the story goes, not only defend the rights of owners but also help put flagging firms back on track.

The free-market economist's defense of shareholder rights lacks, however, an adequate analysis of the value-creating function of top management and the conditions under which it succeeds or fails in the performance of this function. As Alfred Chandler [6, 8, 9] has shown, the value-creating function of top management is to choose an innovative investment strategy and then build an organizational structure that can develop and utilize the productive resources it has strategically allocated [for elaborations, see 21, 22]. The advocacy of the free operation of the market for corporate control becomes particularly problematic if takeover activity-- and the dominance of owners over managers that it implies--

*This paper owes much to ongoing discussions on finance and industry at Barnard College with Duncan Foley, Chris Grandy, and Perry Mehrling.

- itself undermines the incentive and ability of management to commit the firm's resources to innovative investment strategies and to build the organizational structures that are essential to planning and coordinating the firm's productive resources so that they do indeed create value.

Drawing upon the historical experience of U.S. industry from the early nineteenth century to the present, I shall argue that a necessary, even if not sufficient, condition for the creation of value by the enterprise is that the goals of top managers dominate the goals of owners in determining the firm's strategic decisions and consequently in the allocation of the firm's resources. The basic argument for managerial control can be summarized as follows. The commitment of top managers to the long-term growth of the enterprise is essential to the building of the organizational capabilities that provide the basis for the creation of value-- the generation of superior quality products at lower unit costs-- and hence the foundations for sustained competitive advantage. The commitment of top managers to the building of organizational capabilities will only be forthcoming if they exercise control over the allocation of the firm's resources. Commitment to the firm, which typically derives from lengthy career development within the corporation, provides top managers with superior knowledge relative to outsiders of the firm's technological and organizational strengths and weaknesses-- knowledge that is critical to the adoption of those types of investment strategies that stand a chance of creating value.

To be sure, given entrenched control, top management may choose not to use its knowledge to create value, but simply to enhance its own prestige, power, and wealth. History, however, has witnessed the phenomenal innovative success of American capitalism during a period of fragmentation of ownership and largely unfettered managerial control, as well as the "miraculous" successes of German and Japanese capitalism under conditions of even greater managerial control. Given the historical record, the onus is on the proponents of unregulated capital markets to explain the success of managerial control in the past and to demonstrate that in the present the use of the market for corporate control for disciplining and replacing U.S. corporate managers will put in place top managements with incentives (commitments to the firm) and abilities (firm-specific knowledge) to undertake the investment strategies that will permit U.S. firms to attain and sustain competitive advantage in international competition [for views that are generally consistent with mine, see 28].

As a prelude to the historical argument, consider what roles owners and managers play in the modern corporate enterprise. As owners of the firm's assets, corporate shareholders have the right to appropriate a portion of the value that the enterprise generates. But they do so as portfolio investors who, by simply picking up the telephone, can sever their financial ties with the firm. As portfolio investors, moreover, shareholders need not have any special knowledge of the firm's products or processes. They need not, and as shareholders per se do not, contribute to the creation of value.

It might be argued that shareholders contribute to the value-creation process by financing investments in the firm's assets. The argument is misleading, however, if what is meant by finance is the commitment of resources to enable value-creating capabilities to be put in place. Even in the cases of new issues, which since the 1930s have constituted well under five percent of the sources of funds of U.S. non-financial corporations [30, p. 19], wealthholders generally become shareholders by purchasing the right to the future returns of productive assets that have already been put in place by someone else. That someone else may have been an owner, but if so he or she has almost invariably also been the manager of a privately held firm, and it was as a manager that he or she developed the value-creating capabilities of the enterprise.

It might be argued that, as financial returns accrue, the corporate shareholder finances new productive investments by permitting the firm to retain earnings. Yet the general consensus seems to be that, if and when corporate shareholders have the power to determine the firm's financial policy, they favor the payout rather than the retention and reinvestment of earnings. The "double taxation" of corporate dividends in the United States may well have served as a disincentive for shareholders to raid the surplus. But the existence and persistence of such a tax law in itself reflects a social priority to keep shareholders from depriving the firm of internally generated funds for investments in value-creating assets [see 24 for a discussion of a failed attempt to repeal the double taxation law in 1938]. Recent changes in tax laws that make the double taxation of dividends less onerous to shareholders may well reflect the shift of power from managers to owners that I shall document.

In short, modern corporate shareholders do not contribute resources to the creation of value; they merely appropriate a share of the value gains by virtue of ownership of the firm's assets. In contrast, managers have an integral role to play in the process of value creation. Economics textbooks, however, have failed to explicate and analyze the value-creating function of management. The textbook theory of the firm has the manager seeking to maximize profits and minimize costs, while taking technology and economic development as given, in a perfectly competitive environment. Textbook managers may play a role in ensuring that existing value is not wasted, but they do not play a role in determining how much value their firms create. Put differently, the firm takes the level of technology and economic development as given, leaving managers to optimize subject to these constraints.

Since the 1950s behavioral theorists have sought to enrich the textbook theory of the firm by recognizing that, in the real world, perfectly competitive conditions do not prevail, creating the possibility for what has been called "managerial discretion". One variant of behavioral thought has it that product market "imperfections" protect firms from competitive discipline, enabling corporate managers to pursue the goal of self-aggrandizement rather than profit-maximization as posited in the perfectly competitive model [32]. Another variant

has it that, faced with uncertainty in an "imperfectly" competitive environment, managers "satisfice" rather than maximize profits [3].

In either case, the perfectly competitive model is held up as the ideal of economic efficiency. Yet it is an "ideal" in which the firm makes no contribution to the development of the value-creating capabilities of technology and organization. Certainly, this narrow view of the managerial function pays no heed to Joseph Schumpeter's argument, made over forty years ago, that the firm must be analyzed as an engine of economic development. "What we have got to accept," said Schumpeter in *Capitalism, Socialism, and Democracy* [29, p. 106],

is that [the corporate enterprise] has come to be the most powerful engine of [economic] progress and in particular of the long-run expansion of output not in spite of, but to a considerable extent through, this strategy that looks so restrictive when viewed in the individual case and from the individual point in time. In this respect, perfect competition is not only impossible but inferior, and has no title to being set up as a model of ideal efficiency.

Perfect competition prohibits management from performing its value-creating function-- the production of high quality products at low unit costs. The development and utilization the firm's productive resources requires that management exercise a degree of control over market forces, including the "market for corporate control." To create value, the enterprise must commit financial resources to specific processes to make particular products. Once committed, the productive assets of the firm represent fixed costs that must then be recouped by the production and sale of the firm's output.

Fixed costs pose an economic problem to the firm because the production and sale of the firm's output occur only after a time lag and the stream of future revenues to cover the costs is uncertain. The managerial function is to solve the economic problem by transforming fixed costs into revenue-generating products. Insofar as management succeeds in this function, it contributes to the creation of value.

At the time that fixed costs are incurred, whether or not the firm will succeed in creating value is highly uncertain. But the firm does not take uncertainty as given. A firm that pursues an innovative investment strategy that may permit it to gain a distinct advantage over its competitors is, in effect, confronting uncertainty. Firms that want to live in the perfectly competitive world of the textbooks can avoid uncertainty by eschewing innovative investment strategies, but by the same token these adaptive (as distinct from innovative) firms cannot and do not contribute to the process of economic development.

Having confronted uncertainty, the innovative firm then tries to manage it by building an organizational structure to plan and coordinate the development

and utilization of its investments. Investment in "organizational capital" increases the fixed costs of the innovative strategy. But it is the resultant firm-specific organizational capabilities that can enable the firm to generate higher quality products at lower unit costs than its competitors. Generally speaking, the more innovative the firm's investment strategy, the greater its fixed costs and the greater the uncertainty of eventually generating revenues to more than offset these costs. Having committed the firm's resources to such a strategy, the managerial function is to manage uncertainty by building organizational capabilities that can in fact generate high quality products at low unit costs. The more innovative the firm, the more critical is the managerial function in the value-creating process.

To create value on the basis of high fixed costs and in the face of uncertain revenues requires not only the performance of the managerial function but also a high degree of financial commitment, to ensure that specific human and physical resources are developed and utilized by the specific firm. Financial commitment, that is, is critical to the generation of firm-specific organizational commitment. A necessary condition for value creation is that those who control the financial resources available to a firm view the long-run development and utilization of the value-creating capabilities of the enterprise as their primary goal. Career managers, who, often over a period of decades, stake their futures on the success of a particular firm, are the corporate participants most likely to be most committed to the value-creation process.

Modern corporate shareholders, in contrast, are most likely to have the least commitment to the value-creation process. As portfolio investors who can at any point in time liquidate their stakes in the firm, modern shareholders do not have the incentive to make the necessary financial commitment to the firm, even when it is within their power to do so. Financial control must rest with those who have a long-term personal commitment to the specific firm as well as the knowledge required to determine when and for what purposes financial commitments should be made. If, in the modern corporation, managers have this personal commitment to the firm-specific creation of value and the knowledge to allocate resources to this end, then it follows that they should exercise financial control.

The Evolution of Ownership and Control

When and under what conditions in the course of U.S. industrial history have managers rather than owners exercised financial control, and what can we say about the implications of the locus of control for value creation and economic performance? The nineteenth century was characterized by the integration of ownership and control. Owners of firms made the strategic investment decisions, relying upon their own capital and that of friends, family, and former business associates to launch a new venture. They then relied upon

retained earnings to transform the new venture into a going, and ongoing, concern.

Despite the lack of developed markets for industrial securities in the nineteenth century, owner-managers of going concerns found ways to raise additional capital without diluting either their ownership or control. One prominent method was to start a bank to gain privileged access to loan capital from a friendly financial institution that would not put the squeeze on its borrowers in downturns [20]. When, as was the case in New England, groups of industrialists invested in a bank and then lent money back to themselves, each capitalist in effect diversified his investments across the group's various businesses while retaining ownership and control over his own. By creating a diversified local capital market, a bank also enticed local insurance companies to invest in its stock, increasing the loanable funds available to the industrialists who had founded the bank.

But the absence of well-developed markets in industrial shares made it difficult for the industrialist to break the link between ownership and control if he wanted to retire from active management of the business or realize the monetary value of his accumulated assets. One option for the owner-manager who had built up the firm was to exercise his prerogative of living off the productive assets that he had accumulated, and run the business into the ground. Alternatively, he could preserve the firm's assets by passing control and ownership along to a family member, or by selling the business to another owner-manager (or group of owner-managers), if a buyer with the requisite finance and managerial capabilities could be found. In either case, the integration of ownership and control was preserved because owners remained managers.

As with so many other changes in American business institutions, the separation of ownership and control in the United States began with the railroads [7]. Local merchants and other businessmen who stood to gain from a railroad connection with another region contributed the share capital that enabled construction to begin. Most of the remaining railroad capital was raised through the flotation of bonds, an activity that led to the rise of the Wall Street investment banks and, as the railroads expanded their investment scale and geographic scope, the creation of hierarchies of salaried managers. The permanency of the railroads as going concerns made it possible for the original owners to sell their shares to portfolio investors. These transfers of ownership in conjunction with the convertibility of many railroad bonds into stock led to the emergence of the secondary market in railroad stocks and the separation of ownership from control.

Until the merger movement that began in the 1890s, however, a national market for industrial securities did not exist in the United States. As with the railroads earlier, the industrial stock market had to be created on the foundations of successful industrial enterprises that owner-managers had built up on the basis of retained earnings in the decades after the Civil War. By merging the most

prominent firms in an industry, the Wall Street investment bankers, and particularly J. P. Morgan, made the shares of the new oligopolies all the more attractive to the public.

The immediate beneficiaries of the emergence of the industrial stock market were the owner-managers who had transformed the firms from new ventures into going concerns. They were able to monetize the value of the assets that they had accumulated over the years. In most cases, the old entrepreneurs retired from the industrial scene, leaving managerial control in the hands of career managers, while the ownership of the firms was scattered among a wealthholding public that generally knew next to nothing about the strategies and structures of the firms in which they held shares [26].

The resultant fragmentation of ownership left managers firmly in control of corporate financial policy. During the 1910s and 1920s there was a further dispersion of ownership of industrial stocks among the wealthholding public [25]. The most powerful financial institutions, which could have potentially concentrated ownership and vied for financial control of the industrial corporations, did not challenge managerial control or undermine financial commitment. Beyond the turn of the century merger movement, the main business of a Wall Street investment bank was to market the bond issues of the industrial corporations with which it had close relations, an activity that flourished during periods when the industrial enterprises were investing in new plant and equipment. Prime customers for these bonds were commercial banks, mutual savings banks, and insurance companies, which in 1929 together held over 27 percent of U.S. corporate bonds outstanding, but only one percent of U.S. corporate stock outstanding [13, pp. 224-25]. By 1952, these three classes of institutional investors held over 69 percent of U.S. corporate bonds outstanding (with life insurance companies alone holding 58 percent), but only 1.5 percent of U.S. corporate stocks.

Shareholders did not lose out by their lack of financial control. In the 1920s, as the major manufacturing corporations were paying their workers somewhat higher wages and expanding market share by reducing product prices to consumers, they were paying out well over 60 percent of net income as dividends to shareholders [31, pp. 200, 941; see also 19, p. 83]. Yet during the 1920s large manufacturing corporations still had enough retained earnings to fund virtually all their fixed capital outlays. As stock prices mounted during the late 1920s, many firms sold additional shares, not to finance new investment, but rather to retire outstanding debt. Indeed, many manufacturing corporations were so awash with cash that they became financial intermediaries, lending some of their surplus funds on the New York call market where gamblers were paying as much as 12 percent for brokers' loans [12, pp. 19-20; 18].

If the major manufacturing corporations contributed to the stock market crash of 1929 it was because of the phenomenal value-creating capabilities that they exhibited in the 1920s. Once the speculation in shares got going in the

1920s, portfolio investors simply had no conception of the limits to industrial expansion under existing institutional arrangements. A major limit was the restricted organizational capability of the dominant industrial enterprises to move into new lines of business once the modern plant and equipment to service their traditional product markets had been put into place. The 1920s saw the emergence, but not as yet the widespread diffusion, of the multidivisional structure that in the 1940s and 1950s was to enable the manufacturing corporations to extend the organizational limits on reinvestment of profits for enterprise growth.

Unburdened by debt and unfettered by the concentrated power of disgruntled owners, these industrial corporations were able to endure the Great Depression. During the 1930s most of the powerful industrial corporations continued to make developmental investments in technology and organization in preparation for the return of prosperity. It was the very same corporations that had brought U.S. industry to international dominance by the 1920s that extended that dominance during and after World War II. It would appear that during the hey-day of U.S. industrial capitalism, and despite the catastrophe of the Great Depression that came in its midst, management maintained financial control and used that control to make value-creating investments.

Since the 1950s, many, although by no means all, of the great U.S. manufacturing corporations have experienced considerable difficulty in maintaining international competitive advantage in the face of foreign, and particularly Japanese, competition. Confronted by the international challenge, American corporate managers have been accused of forsaking long-term value-creating investments for the sake of short-term profits-- what Schumpeter might have called an adaptive as distinct from an innovative response. Living off assets accumulated in the past without planning and investing for the future, the ranks of top management have become peopled with executives who have expertise in finance and the law rather than the production and distribution of output [14].

There appears to be much truth to these accusations, although it remains the task of business historians to explore and analyze if, when, and why particular manufacturing corporations that had once been in the forefront of innovation turned to living off past success rather than investing for future growth. But whatever the responses of particular firms to the vastly changed international competitive environment of the past three decades, it is clear that, since the 1960s, the evolution of the financial environment within the United States has dramatically increased the power of owners over the determination of corporate financial policy. Even if not a prime cause of U.S. loss of international competitive advantage, the loss of financial control on the part of strategic managers has undermined their incentives and abilities to build the organizational capabilities so critical to the process of value creation.

Since the 1960s, mutual funds, pension funds, and life insurance companies have been the prime institutional means of the concentration of shareholder power. Throughout the 1950s and 1960s common stocks amounted to about 85 percent of the assets of mutual funds. In 1970 common stocks represented 81 percent of the assets in equity, bond, and income mutual funds. Although this figure stood at only 36 percent in 1986 (primarily because of increased holdings of municipal and long-term government bonds), nevertheless the dollar value of common stocks held by mutual funds increased by almost 300 percent from 1970 to 1986 [16]. In 1955 only 30 percent of the assets of pension funds were invested in common stocks, but by 1968 the figure was almost 63 percent, and in 1985, 51 percent. In the 1950s, 3 or 4 percent of the assets of life insurance companies were in corporate stocks; in the 1970s and 1980s between 9 and 10 percent [1, p. 36].

In 1967 an article appeared in *Fortune* entitled, "Mutual Funds Have the Votes and Some of Them are Starting to Lean on Management" [23]. Yet even in 1970 mutual funds accounted for only 1.3 percent of the total funds supplied to U.S. money and capital markets, compared to 8.7 percent by federal loan agencies and 31.3 percent supplied by commercial banks. In 1986 mutual funds supplied 17.4 percent of total funds, slightly more than federal loan agencies and just 1.7 percent less than commercial banks [1, p. 37].

In 1960 institutional investors owned 17.2 percent of the value of shares and accounted for 24.3 percent of the volume of trading on the New York Stock Exchange. By 1982 their share of the equity value had doubled to over one-third, while their share of trading had risen by about three and a half times to 83.8 percent of New York Stock Exchange volume [15, p. 52].

Commitment, Financial and Organizational

Shareholding is no longer fragmented in the United States; millions of American households have turned to concentrated investing power to maximize their existing wealth and secure their futures. In general, these households probably know less than they ever did (which was never much) about how the returns to their portfolio investments are being generated. The financial institutions that serve these households must compete for their funds by showing high returns on a regular basis and will shift their portfolios in and out of securities to do so. Focused as they are on the high returns on their financial portfolios needed to attract household savings and on the constant restructuring of their portfolios to maximize yields, the goals of institutional investors represent the antithesis of financial commitment. If only because of the need to compete for savings, the institutional investor wants high returns on investments today or tomorrow, and certainly not five or ten years from tomorrow.

One aggregate measure of the loss of managerial control over corporate financial policy in the 1980s is the ratio of domestic undistributed profits to

total sources of funds for U.S. nonfarm, nonfinancial corporations. In the 1950s undistributed profits represented 24 percent of total sources of funds; in the 1980s the figure has averaged 7 percent. Despite an apparent reassertion of managerial power in the late 1970s, from 1982 through 1986 less than 4 percent of total funds were secured from domestic undistributed profits [11, p. 354].

The impact of institutional investors on corporate financial policy goes far beyond the direct pressure that their concentrated ownership permits them to exert on managers. Without the concentrated ownership of institutional investors, the corporate raider would be unable to amass sufficient ownership rights to threaten a hostile takeover. The rise of hostile takeovers and the growing volume of stock market activity generated by the rise of the institutional investor have also been major factors in the transformation of Wall Street investment banks from institutions that served the long-term financing needs of U.S. corporations to institutions that make money by trading in securities [for good accounts, see 2, 4, 5]. The huge portfolios of institutional investors also made possible the growth of the junk-bond market in the late 1970s, which in turn has become the major means of financing hostile takeovers as well as leveraged buyouts by management to fend off the raiders.

The proliferation of leveraged buyouts in the 1980s-- from 99 major deals worth some \$3 billion in 1981 to 308 major deals worth almost \$41 billion in 1986 [27, pp. 7-8]-- exemplifies the impact of shareholder power on management decision-making. For business historians, the most famous LBO was that of Henry Ford at the peak of his success in 1920, after some of the shareholders in his company successfully sued him for dividends. But Ford's phobia of losing managerial control was not typical of the corporate manager of the 1920s who, it might be recalled, was likely to sell shares to pay off debt. In the 1920s shareholders had ownership but managers had control. In sharp contrast, in the 1980s, fearful of losing corporate control, industrial managers have been incurring debt to take stock off the market, loading their firms with fixed capital costs that have nothing to do with investments in value-creating assets. Managers may be using LBOs to reassert their control, but in the process they typically undermine the abilities of their firms to make the financial commitments required to undertake innovative investment strategies.

Nor is it just financial commitment that is being undermined by the current financial revolution. As argued earlier, a critical role of financial commitment is to secure organizational commitments from the technical and managerial personnel who are central to the building of firm-specific organizational capabilities. Yet the very opportunities for returns on portfolio investments that the transformation of the financial sector engenders undermines the incentives within the firm to make long-term commitments to direct investments. Many top corporate managers, driven more by the volatile market values of their own shareholdings and stock options than by a managerial commitment to value reation, become cooperative participants in the decline of managerial control.

If the firms over which they preside become vulnerable to takeover, they can look to golden parachutes to bail them out. At the same time, the high rates of return available to portfolio investments in the U.S. economy provide top managers with a rationale for eschewing highly uncertain value-creating investments. Meanwhile, further down the corporate hierarchy, there is an erosion of the incentives to career building on the part of those who might have contributed their skills and efforts to the value-creation process. On the one hand, the firm's long-term commitment to the loyal employee, once assured, has become a questionable proposition, while, on the other hand, financial pursuits offer much higher paying employment now.

One lesson that can be drawn from U.S. industrial history is that a first step in reorienting U.S. corporations towards investment in value-creating assets, both technological and organizational, is the restoration of managerial control over corporate financial policy. To perform the value-creating function, top managers must be committed to long-term growth of the firm and possess the knowledge to carry the strategy through. The process of value creation requires not only that the firm's strategic decision-makers have financial control, but also that they use that control to make financial commitments to the development and utilization of new productive resources, including the human resources that collectively provide the firm with organizational capability.

Business historians have much to contribute to current discussions of U.S. industrial competitiveness. To understand corporate strategy, structure, and performance, we must get inside what economists have long viewed as the "black box." We know that not all dominant U.S. industrial corporations have been afflicted to the same degree by the erosion of financial commitment, and some apparently not at all. Our difficult task is to discover how and why, even within a common national and international financial environment, the investment strategies and organizational structures of some dominant U.S. industrial firms have remained innovative while the responses of others have been adaptive. Unfortunately, many if not most American corporate managers-- particularly the adaptive ones-- are likely to be far less interested than we are in uncovering the historical dynamics of the firms that they control.

References

1. American Council of Life Insurance, *Life Insurance Fact Book Update 1987* (Washington: American Council of Life Insurance, 1987).
2. Ken Auletta, *Greed and Glory on Wall Street* (New York: Warner, 1986).
3. William Baumol and Maco Stewart. "On the Behavioral Theory of the Firm," in Robin Marris and Adrian Woods, eds., *The Corporate Economy* (London: Macmillan, 1971).

4. John Brooks, *The Takeover Game* (New York: Dutton, 1987).
5. Tim Carrington, *The Year They Sold Wall Street* (New York: Penguin, 1987).
6. Alfred D. Chandler, Jr., *Strategy and Structure* (Cambridge: MIT Press, 1962).
7. _____, "Patterns of American Railroad Finance, 1930-1850," *Business History Review*, 28 (September 1954), pp. 248-263.
8. _____, *The Visible Hand* (Cambridge: Harvard University Press, 1977).
9. _____, *Scale and Scope* (Cambridge: Harvard University Press, forthcoming 1989).
10. Harold Demsetz and Kenneth Lehn, "The Structure of Corporate Ownership: Causes and Consequences," *Journal of Political Economy*, 93 (November-December 1985), pp. 1155-77.
11. *Economic Report of the President, 1988* (Washington: GPO, 1988).
12. John Kenneth Galbraith, *The Great Crash* (New York: Avon, 1980).
13. Raymond W. Goldsmith, *Financial Intermediaries in the American Economy since 1900* (Princeton: Princeton University Press, 1958).
14. Robert H. Hayes and William J. Abernathy, "Managing Our Way to Economic Decline," *Harvard Business Review*, 58 (July-August 1980), pp. 67-77.
15. Samuel L. Hayes, III, "Investment Banking: Commercial Banks' Inroads," *Economic Review*, Federal Reserve Bank of Atlanta (May 1984), pp. 50-60.
16. Investment Company Institute, *1987 Mutual Fund Fact Book* (Washington: Investment Company Institute, 1987).
17. Michael C. Jensen, "Takeovers: Their Causes and Consequences," *Journal of Economic Perspectives*, 2 (Winter 1988), pp. 21-48.

18. Richard M. Keehn and Gene Smiley, "Margin Purchases, Brokers' Loans and the Bull Market of the Twenties," *Business and Economic History*, second series, 17 (1988).
19. Albert Ralph Koch, *The Financing of Large Corporations, 1920-1939* (New York: National Bureau of Economic Research, 1943).
20. Naomi Lamoreaux, "Banks, Kinship, and Economic Development: The New England Case," *Journal of Economic History*, 46 (September 1986), pp. 647-667.
21. William Lazonick, "The Social Determinants of Technological Change," paper presented to the Second International Conference on the History of Enterprise, Terni, Italy, October 1-4, 1987.
22. _____, "The Causes and Consequences of the Modern Corporation: Innovation and Adaptation in the Theory of the Firm," paper presented to the University of California Intercampus Group in Economic History Conference, University of California, Santa Cruz, April 29-May 1, 1988.
23. Arthur M. Lewis, "The Mutual Funds Have the Votes, and Some of Them are Starting to Lean on Management," *Fortune*, (May 1967), pp. 150-153.
24. Robert McCauley, "The Year Management Almost Lost Control of the Seed Corn," photocopy, Harvard University, January 1980.
25. Gardiner C. Means, "The Diffusion of Stock Ownership in the United States," *Quarterly Journal of Economics*, 44 (August 1930), pp. 561-600.
26. Thomas R. Navin and Marion V. Sears, "The Rise of a Market for Industrial Securities, 1887-1902," *Business History Review*, 24 (June 1955), pp. 105-138.
27. Quality Services, *Merger and Acquisition Sourcebook, 1987 Edition* (Santa Barbara: Quality Services, 1987).
28. F. M. Scherer, "Corporate Takeovers: The Efficiency Arguments," *Journal of Economic Perspectives*, 2 (Winter 1988), pp. 69-82.
29. Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy*, third edition (New York: Harper, 1950).

30. Robert Taggart, "Have U.S. Corporations Grown Financially Weak?" in Benjamin M. Friedman, ed., *Financing Corporate Capital Formation* (Chicago: University of Chicago Press, 1986), pp. 1-33.
31. United States Bureau of the Census, *Historical Statistics of the United States from Colonial Times to 1970* (Washington: GPO, 1976).
32. Oliver E. Williamson, *The Economics of Discretionary Behavior*, (Englewood Cliffs: Prentice-Hall, 1964).