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Investment in innovation: Corporate governance and employment ; is prosperity sustainable in the United States?

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The Jerome Levy Economics Institute of Bard College

Public Policy Brief

Investment in Innovation

Corporate Governance and Employment:
Is Prosperity Sustainable in the United States?

William Lazonick and Mary O'Sullivan

LEVY INSTITUTE

No. 37, 1997

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Editor: Lynndee Kemmet

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Summary

In the decades following World War II American corporations dominated world markets, U.S. per capita income increased, and the distribution of income showed continual improvement. It appeared that the American economy had achieved sustainable prosperity—the progressive spreading of the benefits of economic growth to more people over a prolonged period of time. But in the past 20 years well-paid and secure jobs have been disappearing—the victims, corporate executives say, of global competition—and the income gap is now widening, with those at the lower end and also in the middle of the income distribution seeing a drop in real income and mounting employment insecurity. In trying to find out what has gone wrong with the American economy, Research Associates William Lazonick and Mary O’Sullivan put the spotlight on the governance and employment practices of the American corporation.

Lazonick and O’Sullivan assert that American corporations are being hurt not by low wage scales in other countries, but by their own failure to invest in the organizational learning required to sustain competitive advantage. While their foreign competitors invest in the collective and cumulative learning that can generate the higher-quality, lower-cost products that result in a competitive edge, U.S. corporations have become increasingly segmented, with skill investment concentrated in upper levels of the corporate hierarchy, functions compartmentalized, and strategic decision making vested in high-level managers who are isolated from the organizational learning process. While their foreign competitors are oriented toward value creation (allocating corporate resources to innovative investment strategies), U.S. corporate managers have become oriented toward value extraction (allocating resources to provide high returns to stockholders). To return to competitive success and the promise of sustainable prosperity requires that U.S. corporations reform their corporate governance system. Corporations must invest in broader and deeper skill bases; they must have managers who have the ability and incentive to commit financial resources to collective and cumulative learning processes.

The debate over corporate governance has been dominated by proponents of stockholder control, who argue that managers’ first concern should be the interests of the stockholders, with the primary, and perhaps only, goal being immediate returns on investments.

The increasing dependence of the American system of household finance and saving on yields from stock and the immense growth of institutional investors such as pension and mutual funds put pressure on managers to create a large cash flow out of the organization.

Proponents of managerial control hold that the influence of stockholders should be reduced and managers should be given more autonomy to make developmental investments. Lazonick and O'Sullivan counter that such reforms in themselves will not result in competitive advantage. Managers must have both the ability to make strategic investments in innovation—an ability that can be acquired only through their integration into organizational learning processes—and the incentive to make those decisions. Many U.S. managers are “generalists” who lack specialized knowledge of their corporation's products, production processes, and problems. The widespread practice of tying managers' income to stockholder return encourages them to favor financial liquidity and value extraction over financial commitment and reinvestment in the development of the corporation.

Some observers propose that the problems of corporate governance and industrial development can be solved by recognizing the claims on corporate returns of stakeholders other than stockholders, such as employees. But these stakeholders may have no more ability or incentive to invest in innovation than stockholders or managers. While recognizing individual contributions to the corporation and the need for investment in productive assets, the stakeholder perspective offers no understanding of the collective character of corporate investment and may offer no alternative to extracting returns from past activities.

Lazonick and O'Sullivan conclude that in order for U.S. corporations to remain competitive, the corporate governance system must be based on a concept of innovative enterprise—a concept of “organizational” control, rather than stockholder, managerial, or stakeholder control. Strategic decisions must be made by participants in the corporation who are integrated into the organizational learning processes that enable an enterprise to develop and utilize products and technologies better than its competitors. In the long run the innovative enterprise benefits not just itself but the economy. It is innovative investment that makes corporate returns sustainable into the future, and corporate competitive advantage in the market contributes to making sustainable prosperity possible in the nation.

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Preface

Although actions such as downsizing and rightsizing have appeared to result in greater cost efficiencies for American firms, could they now be paying a price for following low-road management practices? For more than 10 years—certainly for a time predating the current expansion—firms have been facing a shortage of skilled workers, yet they seemingly have not altered their long-term investment strategies to adjust for this deficit. Corporate emphasis on cost reduction has left many workers feeling insecure, has caused a deterioration in employees' loyalty to their firm, and has resulted in a high level of job turnover among skilled workers. All of this has occurred in a climate of increased global competition in which the United States is no longer the world's only economic leader, a climate that will only intensify if and when the European Union becomes a reality.

It would appear that American corporations must alter their long-term investment strategies or continue to lose share in the global marketplace. As Research Associates William Lazonick and Mary O'Sullivan note, U.S. corporations tend to adopt short-term investment strategies—with a primary, or solitary, goal of providing stockholders with quick returns. Foreign competitors, on the other hand, have long-term investment strategies that focus on improving the innovative skills of employees throughout the corporation. This improvement in collective learning and innovation enables foreign firms to produce better-quality products at lower cost. And this ability makes it possible for them to outcompete American firms.

Lazonick and O'Sullivan warn that if American corporations do not alter their investment strategies to take a long-term view that focuses on

employee development, they will not survive. Corporate survival requires a change in the governance of American corporations that places decision-making power with all those who contribute to the corporation's production and innovation. This change in governance requires that the power of stockholders to extract value from the corporation be curbed. If control of corporations remains in the hands of those who seek only their own financial gain from the corporation, the American corporation will be unable to compete in the global economy. Moreover, firms will find it increasingly difficult to find and retain the skilled workforce they require in the current age of rapid technological advance. And the failure of U.S. corporations will hamper policy efforts aimed at improving the lives of Americans, because the loss of corporations will result in the continued and even increasing loss of well-paying, secure jobs.

Lazonick and O'Sullivan's recommendations provide a course of action that will require much corporate willpower, but could set the United States on a course of long-term competitiveness and growth.

Dimitri B. Papadimitriou

Executive Director

December 1997

Corporate Governance and Employment: Is Prosperity Sustainable in the United States?



The Disappearance of Good Jobs in the American Economy

Can the American economy achieve sustainable prosperity—a progressive spreading of the benefits of economic growth to more and more people over a prolonged period of time? During the first half of the twentieth century, despite the debacle of the Great Depression, the United States emerged as the world’s most powerful industrial nation. In the post–World War II decades, the United States had not only by far the world’s highest per capita income, but also a distribution of income that, until the early 1970s, showed continual improvement. Since then Japan has mounted a dramatic challenge to the economic leadership of the United States, while the U.S. income distribution has become increasingly unequal (Maddison 1994; Danziger and Gottschalk 1996). A report from the Organization for Economic Cooperation and Development shows that in the 1980s, of all the advanced industrial economies, the United States had the widest income gap between the rich and poor (Atkinson, Rainwater, and Smeeding 1995).

It is not only those at the bottom of the income distribution who are losing out. A distinctive dimension of growing income inequality in the United States has been a drop in the real income of those in the middle of the income distribution—what many have called “the vanishing middle class” (Harrison and Bluestone 1988). Adjusted for inflation, the median income of American employees in the mid 1990s was some 5 percent lower than it was in the late 1970s. Yet since the early 1970s the American economy has grown at an average annual rate of well over 2 percent. Why has such a small proportion of Americans, perhaps only

the top 20 or 30 percent of the income distribution, been sharing in this growth?

A major cause of the growing inequality in income distribution has been the disappearance of “good jobs” in the American economy. These are jobs with major corporations that provide a high standard of living in terms of earnings, employment stability, and benefits for sickness and old age. The widespread availability and economic viability of these good jobs in the past provided the foundation for sustainable prosperity in the United States. The disappearance of such jobs has placed sustainable prosperity in considerable jeopardy.

Goods jobs have been under pressure since the 1970s and have been disappearing rapidly since around 1980.¹ The phenomenon is structural, not cyclical. Hundreds of thousands of stable and well-paid blue-collar jobs that were lost in the recession of 1980 to 1982 were never restored. Between 1979 and 1983 the number of people employed in the economy as a whole increased by 377,000, or 0.4 percent, while employment in durable goods manufacturing—which supplied most of the good blue-collar jobs—declined by 2,023,000, or 15.9 percent (Council of Economic Advisers 1992, 344).

Indeed, the “boom” years of the mid 1980s saw hundreds of major plant closings. Between 1983 and 1987 4.6 million workers lost their jobs, 40 percent of which were in the manufacturing sector (Herz 1990, 23; Staudohar and Brown 1987; Patch 1995). The elimination of these well-paid and stable blue-collar jobs is reflected in the decline of the proportion of the manufacturing labor force that is unionized—from 47.4 percent in 1970 to 27.8 percent in 1983 to 18.2 percent in 1994 (U.S. Department of Commerce 1975, 371; 1995, 444; U.S. Bureau of the Census 1976, 137).

Throughout the 1980s American corporations displayed a mounting predilection for “downsizing.” Not only blue-collar workers were affected. Professional, administrative, and technical personnel experienced a significant share of the elimination of previously stable and remunerative jobs. For example, a *Business Week* cover story of August 1986, entitled “The End of Corporate Loyalty?” observed that “cutbacks are becoming a way of life even in healthy companies” (Nussbaum

1986). In the “white-collar” recession of the early 1990s tens of thousands of managerial positions were eliminated and, like the earlier blue-collar losses, apparently on a permanent basis. Blue-collar workers continued to bear the brunt of displacement, but the dismissal of white-collar employees became more prevalent. In 1982 the rate of unemployment of professional, administrative, and technical employees was 37 percent of the rate of unemployment of all employees; in 1994 that figure was 44 percent (U.S. Bureau of Labor Statistics 1985, 408; 1995, 421).

Leading the downsizing of the 1980s and 1990s were many of America’s largest corporations. From 1990 to 1995 the number of employees of the 50 U.S. companies with the greatest sales volume declined by almost 13 percent, even though the proportion of sales to U.S. gross national product accounted for by these companies declined by less than 1.5 percent (see Table 1). Of the 21 U.S. industrial corporations that in

Table 1 Total Employment and Sales as a Percentage of GNP, 50 U.S. Industrial Corporations with Largest Sales, 1954–1995

Year	Employees	Annual Average Percentage Change	Sales as Percentage of GNP
1954	3,729,097	—	18.83
1959	4,087,864	0.46	19.93
1969	6,366,904	4.53	21.69
1979	6,203,785	−0.25	29.81
1990	5,821,300	−0.57	23.41
1993	5,169,128	−3.73	20.70
1995	5,079,747	−0.86	21.99

Note: Figures are for worldwide employment and sales.

Source: “The Fortune 500,” *Fortune*, various issues.

1990 each employed more than 100,000 people, 17 companies (employing 3.4 million people worldwide) downsized in the 1990s and had by 1995 reduced their net combined employment by over 700,000, or by about 21 percent, from the 1990 levels (see Table 2).

A good indicator of decline in stable and remunerative employment is the extent to which employers give managers and workers access to sickness and old age benefits. In 1960 only 11 percent of the civilian labor force had group health plans. By 1970 this proportion had increased to

Table 2 Net Employment Change of U.S. Industrial Corporations with over 100,000 Employees in 1990, 1990–1995

Company	Employees, 1990	Employees, 1995	Employment Change, 1990–1995	Percent Change, 1990–1995
General Motors	761,400	709,000	-52,400	-6.9
Ford	370,400	346,900	-23,410	-6.3
IBM	373,816	252,215	-121,601	-32.5
Pepsico ^a	308,000	480,000	172,000	55.8
General Electric	298,000	222,000	-76,000	-25.5
United Technologies	192,600	170,600	-22,000	-11.4
Philip Morris	168,000	151,000	-17,000	-10.1
Boeing	161,700	105,000	-56,700	-35.1
du Pont	143,961	105,000	-38,961	-27.1
Eastman Kodak	134,450	96,600	-37,850	-28.2
Chrysler	124,000	126,000	2,000	1.6
Digital Equipment	124,000	61,700	-62,300	-50.2
McDonnell Douglas	121,190	63,612	-57,578	-47.5
Westinghouse	115,774	77,813	-37,961	-32.8
Xerox	110,000	85,200	-24,000	-22.5
Goodyear Tire	107,961	87,390	-20,571	-19.1
Sara Lee	107,800	149,100	41,300	38.3
Allied Signal	105,800	88,500	-17,300	-16.4
Motorola	105,000	142,000	37,000	35.2
Exxon	104,000	82,000	-22,000	-21.2
Rockwell International	101,900	82,671	-19,229	-18.9

Note: Figures are for worldwide employment and downsizing. They are not adjusted for acquisitions and thus may considerably understate gross downsizing.

^aIn 1990 Pepsico was listed as an industrial company under the “beverage” classification; in 1995, after acquiring a substantial number of restaurants, the company was listed as a service company under the “food services” classification.

Source: “The Fortune 500 by Industry,” *Fortune*, April 22, 1991; “The Fortune 1000 Ranked Within Industries,” *Fortune*, April 29, 1996.

30 percent and by 1980 to 62 percent. Yet by 1994 only 53 percent of employees had health benefits paid by employers. A similar trend can be seen in pension funds run by employers or unions. In 1960 24 percent of the civilian labor force had such benefits, in 1970 32 percent, and in 1980 45 percent. By 1994 this proportion had declined to 41 percent. This decline in benefits occurred for all occupational classifications. For example, comparing 1982 and 1993, coverage by group health plans dropped from 72 percent to 61 percent for semiskilled workers, from 76 percent to 57 percent for skilled workers (precision production, craft, and repair employees), and from 76 percent to 67 percent for managerial

and professional employees (U.S. Department of Commerce 1983, 406; 1995, 437; 1996, 430).

From Value Creation to Value Extraction

The first place to look for an explanation of the disappearance of good jobs in the American economy is employment trends within the nation's major industrial corporations. In the decades after World War II, the foundations of U.S. economic development were the willingness and ability of the nation's major industrial corporations to allocate their considerable financial resources to investment strategies that created the good jobs that many Americans began to take for granted. In 1969 the 50 largest U.S. industrial corporations by sales directly employed 6.4 million people, equivalent to 7.5 percent of the civilian labor force (see Table 1). In 1991 these companies directly employed 5.2 million people, equivalent to 4.2 percent of the labor force, and since 1991 the downsizing of these companies has gone forward at a steady, and even increasing, pace. Yet, prior to the 1980s large industrial corporations had been the employers that had provided the most stable and remunerative jobs in the economy.

What underlies the prevalence and persistence of corporate downsizing? A typical top management explanation is that changes in competition and technology have rendered a significant portion of existing corporate labor forces redundant in terms of the quantity of people who can generate corporate revenues and the quality of skills needed to do so. From this perspective, downsizing is part and parcel of a strategy for corporate restructuring to enhance the ability of remaining employees to generate the revenues that can sustain their employment. Should the corporation try to maintain existing levels of employment, so the argument goes, the long-term viability of the whole enterprise could be in jeopardy; the obligation of the corporation is to remain competitive, an objective that may well be in conflict with maintaining the prior stock of good jobs.

The realities of international competition and technological change undoubtedly demand organizational restructuring. It is possible, however, that top managers of major U.S. corporations have focused

so much on job cutting as the prime mode of cost cutting that they have ignored the allocation of corporate resources to innovative investment strategies. Although competitive outcomes are always uncertain when investment decisions are made, innovative investment strategies can result in products of higher quality and lower cost than the enterprise had previously been capable of generating. Such investment strategies invariably require the allocation of substantial resources to skill formation within the enterprise to develop integrated skill bases. This skill formation builds on capabilities that the enterprise has already accumulated and provides the foundation for learning processes that can enable the enterprise to gain sustained competitive advantage. At the same time it can form a new foundation for sustainable prosperity.

Changes in employment within the major U.S. industrial corporations appear to be related to changes in the ways in which those who govern these corporations have been choosing to allocate corporate revenues. Corporate managers control substantial financial and productive resources that permit them to make strategic choices in the allocation of resources. Retained earnings—undistributed profits and capital consumption allowances—have always provided, and continue to provide, the major share of resources for investment in productive capabilities that can make innovation and industrial development possible. From 1970 to 1989, for example, retained earnings accounted for 91 percent of the net sources of finance for U.S. nonfinancial industrial corporations, while debt finance accounted for 34 percent and new equity and other sources were negative (Corbett and Jenkinson 1996, 77; Hall 1994, 139).

The vast resources of major corporations are allocated through a process of strategic decision making, and the choices corporate managers make can have profound effects on the availability and viability of stable and remunerative employment opportunities. To understand what has been happening to employment opportunities in the United States, therefore, we have to understand strategic decision making within the nation's major industrial corporations and how and why it has changed over time. The rhetoric used to support downsizing proclaims that the prime, if not only, corporate responsibility is to “create value for shareholders.” And, indeed, since the 1970s many corporations have become obsessed

with shedding employees for the sake of boosting profits and distributing revenues to stockholders.

Under the banner of “creating shareholder value,” these distributions have taken the forms of both dividends and stock repurchases. The payout ratio—dividends as a proportion of corporate earnings—has risen from about 45 percent in the 1960s and 1970s to over 60 percent in the 1980s and 1990s. Stock repurchases have risen even more dramatically. Prior to the 1980s corporations tended to issue more equities than they repurchased, although equity issues have never been an important source of funds for investment in productive capabilities. But during the 1980s the net equity issues for U.S. corporations became negative in many years, largely as a result of stock repurchases. In 1985, when total corporate dividends were \$92 billion, stock repurchases were \$20 billion, or about 22 percent of dividends. In 1989, when dividends had risen to \$128 billion, stock repurchases had increased to over \$60 billion, or almost 50 percent of dividends. In 1990 to 1993 annual stock repurchases averaged about \$33 billion, but in 1994 they rose to close to \$70 billion, or 33 percent of dividends, and during the first nine months of 1995 they were already over that amount (“Firms Ponder How Best to Use Their Cash” 1995).

The managers of the major U.S. industrial corporations were not always so oriented toward creating value for shareholders. In the quarter century after World War II—during which time the trend was toward greater income equality in the United States—the strategic orientation of corporations was to allocate corporate revenues to the organization for both managers’ and workers’ incomes and benefits as well as for investment in plant, equipment, and skills, especially the skills of managerial personnel. Why, during the late 1970s and early 1980s, did these corporations turn from reinvesting revenues and generating growing numbers of stable and remunerative jobs to distributing revenues to shareholders and shedding long-time employees? The problem is not just a change in ideological outlook by the top managers. To understand the transformation of U.S. industrial corporations from financial commitment to financial liquidity and from value creation to value extraction requires an analysis of the institutional and organizational foundations of U.S. industrial development during the 1950s and 1960s and the erosion of these foundations since the 1970s. At work in the erosion process are

industrial competition from abroad and financial transformation at home.

The Promise of Sustainable Prosperity

The United States has always prided itself on being the land of opportunity—a nation in which although any one individual might rise or fall economically, for the population as a whole economic prosperity would be an ever-increasing reality. The United States emerged from World War II with by far the highest GDP per capita in the world. In the decades after the war the United States not only held leading positions in capital goods industries, such as steel, machine tools, and chemicals, but also was dominant in consumer goods industries, such as automobiles, electronics, and pharmaceuticals. In the rapidly expanding global economy that then prevailed, U.S. leadership in technology and productivity enabled dominant American corporations to offer stable and remunerative employment to growing numbers of managers and workers, both within their own enterprises and in their supply and distribution networks.

In the mid 1960s the United States had 30 percent or more of world market share in aircraft and aircraft parts (50 percent in 1965), guided missiles and aerospace (43 percent), professional and scientific instruments (36 percent), office, computing and accounting machinery (36 percent), and engines, turbines, and engine parts (31 percent) (Diwan and Chakraborty 1991, 43). In 1965 the number of scientists and engineers engaged in R&D as a proportion of total employment was 2 1/2 to 3 times higher in the United States than in Japan, Germany, or France (Nelson and Wright 1994, 151). Into the late 1960s, in absolute terms, expenditure on R&D in the United States was more than double that in the United Kingdom, Germany, France, and Japan combined, largely because of massive U.S. federal government funds deployed in combination with investment and employment by U.S. industrial corporations (Nelson and Wright 1994, 150; Mowery and Rosenberg 1993). The United States also had a 26 percent share of world machine tool production, larger even than that of Germany, which had by far the largest share of world exports.

In the decades after World War II the advantageous position of U.S. industry in the global economy created the promise of sustainable prosperity for Americans. A more limited promise of sustainable prosperity had also appeared in the 1920s when, particularly in the consumer durable, chemical, and electrical manufacturing industries, a number of corporations consolidated their control over large market shares. Between 1919 and 1929 manufacturing production in the United States grew at a rate of 8.0 percent per annum and labor productivity in manufacturing at a rate of 5.6 percent per annum. In sharing in this growth, managers and stockholders fared much better than workers. Between 1920 and 1929 managerial salaries in manufacturing rose by 22 percent and enterprise surpluses rose by 63 percent, while the wages of workers in manufacturing fell by 6 percent (Bell 1940, 28).

The workers who fared best during the 1920s were those who found employment with the dominant mass producers. In the early 1930s, however, the promise of sustainable prosperity vanished. The deepening depression of economic activity put an end to the stable employment that the dominant corporations had been able and willing to provide in the 1920s. Shop-floor workers were particularly affected by these massive cutbacks. Having invested in the skills of managerial employees, the corporations sought to keep their managerial organizations intact. The more valuable the employees as productive assets, the more reluctant corporations were to part with them. Indeed, the industrial corporations continued to augment their R&D capabilities during the 1930s. The research laboratories of U.S. manufacturing enterprises employed 2,775 scientific and engineering personnel, or 0.56 research professionals per thousand manufacturing employees, in 1921; 10,927 professionals, or 1.93 per thousand, in 1933; and almost 28,000 professionals, or 3.5 per thousand, in 1940 (Mowery 1986; Chandler 1985).

During the early 1930s most of the industrial corporations—even those that had pursued progressive employment policies in the 1920s—deemed shop-floor workers to be dispensable because the companies had not invested in their skills. From the nineteenth century the prevailing managerial ideology in the United States had been to develop technology in ways that could dispense with the need for shop-floor skills in the utilization of technology (Lazonick 1990). The progressive employment practices of the 1920s were

designed to secure the cooperation of shop-floor workers to ensure high levels of utilization of expensive high-throughput technologies. But at the same time corporate managers sought to develop new technologies that could take the exercise of skills off the shop floor.

When, during the 1930s, even the most dominant industrial corporations failed to provide shop-floor workers with stable and remunerative jobs, these employees turned to industrial unionism to provide them with some control over their future. Backed by New Deal legislation that protected the rights of workers to organize unions and engage in collective bargaining, shop-floor employees in American manufacturing built powerful mass-production unions that would become a major force in ensuring employment security and high wages for them in the post-World War II expansion. In the postwar decades these unions did not challenge the principle of management's right to control the development and utilization of the enterprise's productive capabilities (Lazonick 1990). However, the quid pro quo for union cooperation was that seniority was to be a prime criterion for promotion in a well-defined job structure, thus giving long-time workers access to a succession of jobs paying gradually rising hourly wage rates. This labor-management accord provided the organizational basis on which the dominant industrial corporations shared the gains of the postwar prosperity with shop-floor workers.

The economic basis for the growth of secure and well-paid employment opportunities and a more equal distribution of income in the United States in the postwar decades was the rapid growth of the international economy combined with the capability of the major U.S. industrial corporations to dominate in global competition. The basis of the sustained competitive advantage of these corporations was organizational learning, that is, collective and cumulative learning that enables an enterprise to develop and utilize products and process technologies that competitors cannot easily replicate. In most of the U.S. industrial corporations that dominated in global competition, this organizational learning occurred among technical, administrative, and professional personnel within the managerial level of the organizational structure and specifically excluded operatives on the shop floor.

These corporations still relied on the cooperation of shop-floor employees to secure high degrees of utilization of the process technologies in which the corporations had invested. Therefore, the corporations could benefit economically, within the framework of the industrial unionism, by sharing some of the returns from their sustained competitive advantage with shop-floor workers in the form of stable employment and good wages and benefits.

The corporations may have provided shop-floor workers with stable and remunerative employment, but they made little, if any, attempt to integrate them into the organizational learning processes. The ideology persisted that these workers were merely “hourly employees” and hence easily interchangeable and replaceable units of labor. Such hourly employees stood in contrast to professional, administrative, and technical employees (the salaried personnel), who were deemed to be members of the enterprise in whose skills the corporation had to invest and whose capabilities the corporation had to retain. The result was a sharp organizational segmentation between managers and workers—between insiders and outsiders to the learning process—that would prove to be the Achilles’ heel of American industrial corporations when challenged from abroad by corporations that integrated shop-floor labor into the processes of organizational learning.

The Challenge to Sustainable Prosperity

The sustained competitive advantage of an enterprise, region, or nation depends on its ability to develop and utilize productive resources better than rival enterprises, regions, or nations. Superior development and utilization of productive resources have increasingly required learning that is collective and cumulative rather than simply the aggregation of learning by individuals (O’Sullivan 1996; Lazonick and O’Sullivan 1996). The skill bases that can be integrated to generate such organizational learning vary across industries because different technologies provide different opportunities for collective learning. For example, organizational learning in the pharmaceuticals industry relies on the integration of a very different skill base from the skill base in the automobile industry. Moreover, even within a particular industry, the character of the integrated skill base that can generate organizational

learning varies over time as cumulative learning transforms the possibilities for a collective skill base to develop and utilize productive resources. For example, compared with the skill bases restricted to managerial personnel that enabled U.S. automobile companies to be the dominant mass producers from the 1920s to the 1960s, the skill bases that enabled Japanese automobile producers to challenge U.S. companies successfully are broader and deeper. They include both managerial and shop-floor employees within core enterprises and integration of the skill bases in core enterprises with those in suppliers.

As a general rule, within any given industry and for any given technology, the potential for organizational learning has become increasingly dependent on the integration of broader and deeper skill bases. These broader and deeper skill bases, mobilized for industrial development, in turn can provide the foundation for the sustainable prosperity of a region or nation. Not only can they generate the higher-quality, lower-cost products that bring economic growth, but, by relying on the participation of more people with greater skills to generate these products, they can distribute the gains of economic growth more widely among the working population.

If the challenges to sustainable prosperity in the United States have come from foreign enterprises that develop and utilize productive resources by integrating broader and deeper skill bases, strategic responses of U.S. enterprises could entail organizational integration that extends the collective learning process to groups—employees and other firms—whose productive capabilities were previously excluded from that process. But such innovative responses may not be forthcoming because corporate decision makers may have neither the incentive nor the ability to make such strategic investments. They may seek to compete on the basis of the narrower skill bases that had given their enterprises advantage in the past. In the face of competitive challenges, they may even choose not to innovate, that is, not to develop and utilize particular technologies in industries in which a competitive response demands investments in broader and deeper skill bases.

In the process of innovation a necessary complement to organizational integration is financial commitment, that is, the social relations that are the basis for the ongoing access of a business organization to the

financial resources required to sustain the development and utilization of productive resources (Lazonick and O'Sullivan 1997a, 1997b). The level and duration of financial commitment required to generate innovation varies across industries with different learning processes and over time as learning processes require broader and deeper skill bases.

In combination, organizational integration and financial commitment provide social foundations for innovative business enterprise. In terms of inputs into the production process, organizational integration supplies knowledge and financial commitment supplies money. However, these inputs are not commodities. They reflect social conditions or institutions—the relations to the business organization of people who supply knowledge and money. These social institutions determine the norms according to which strategic decisions are made within enterprises concerning the allocation of resources to production and the allocation of returns from it. Without institutions that support organizational integration and financial commitment, business enterprises cannot generate innovation. In all of the advanced industrial nations, in different ways and to varying degrees at any one time as well as over time, organizational integration and financial commitment provide the social foundations for innovation and industrial development.

Organizational Segmentation—Hierarchical, Functional, and Strategic

The challenge to high value-added industry in the United States has come from enterprises that have gained competitive advantage not by paying lower wages than American companies pay, but by developing and utilizing broader and deeper skill bases than American companies do. Even within product markets in which U.S. companies remain world leaders, there is insufficient broadening and deepening of the skill base to retain competitive advantage for producers in the United States.

As we have indicated, the history of the American employment system has created profound biases within American corporations toward hierarchical segmentation and against investment in broader and deeper skill bases. From the early nineteenth century the mobility of labor in the United States created a bias toward developing manufacturing technologies

that would not depend on the skill and initiative of shop-floor workers (Lazonick 1990). To develop such technologies and ensure their complete utilization required investment in managerial organization. Attempts by skilled workers in the late nineteenth century to increase the power of craft unions through their organization into the American Federation of Labor only increased the resolve of entrepreneurs and managers to develop and utilize manufacturing technologies in ways that excluded shop-floor workers from the learning process. The industrial unionism that replaced craft unionism during the 1930s helped to institutionalize the hierarchical segmentation. Industrial unions focused on getting their members a share of the competitive gains made possible by learning processes at the managerial level. In return for higher wages and benefits, shop-floor workers cooperated in supplying the labor effort that ensured high levels of utilization of expensive process technologies.

The problems of collective learning in U.S. industrial corporations go beyond the hierarchical segmentation of management and labor. Within the managerial structure itself, the learning process has become increasingly subject to functional segmentation. Managerial personnel in marketing, product design, and manufacturing do not engage in “concurrent engineering,” working as a team. Instead, upstream specialists (for example, design engineers) work in isolation from downstream specialists (for example, production engineers), in effect, throwing their work—and the problems inherent in it—over a wall to the next functional activity compartment. Functional segmentation results in longer product development cycles and inferior products than can be achieved with functional integration (Hartley 1990; Funk 1992; Clark and Fujimoto 1991). Functional segmentation in U.S. industry has been exacerbated by the desire of specialized professional, administrative, and technical employees to protect their positions within business enterprises from challenges to their authority and responsibility from top managers above and shop-floor workers below.

In addition to hierarchical and functional segmentation, there has been a tendency in U.S. industrial corporations toward strategic segmentation—the vesting of strategic decision making power in high-level managers and their isolation at the top of the corporate hierarchy. In the face of a growing hierarchical and functional segmentation of postwar corporate organizations, top managers portrayed themselves as generalists who

could manage anything and required no specialized knowledge. Indeed, specialized knowledge about particular products and processes was often portrayed as an impediment to strategic decision making, and there was a tendency for people with financial rather than production expertise to rise to the top positions (Hayes and Abernathy 1980).

Strategic segmentation meant that the decision makers came to have little capacity for understanding and evaluating the problems and possibilities for organizational learning within the enterprise. The separation of these top managers from the organizational learning process resulted in strategic decision making that was limited in its ability to assess or build on the enterprise's innovative capabilities (O'Sullivan 1996). Strategic managers often made costly investments in plant and equipment without complementary investments in the organizational learning that could combine physical and human resources to create competitive advantage.²

From Financial Commitment to Financial Liquidity

Organizational integration and the collective learning process for which it provides a foundation require financial commitment. Investment in organizational integration does not occur automatically; it is the result of strategic decisions by those who control financial resources that can be allocated to such investment. The ability of strategic managers to allocate resources to the collective learning process depends on the degree to which they themselves are integrated into that process. Their incentive to make such allocations depends on the extent to which they see their own goals as being furthered through investment in a learning process that is both collective and cumulative.

In the presence of strategic segmentation top managers will be more susceptible to pressures from financial interests to make corporate resources a source of financial liquidity rather than financial commitment. Strategic managers who are not integrated into the collective learning process are more likely to take actions—such as issuing higher dividends, repurchasing stock, and reducing employment—to boost the returns on corporate stock in the short run instead of allocating resources to the investments in organization and technology that are necessary to achieve sustainable prosperity over the long run.

Instead of aligning their interests with members of a collective learning process within their corporations, segmented strategic managers will align their interests with public stockholders, whose only involvement with the corporation is the security purchase they made on the public market and whose only interest in the corporation is financial. Such managers evaluate corporate performance from the perspective of financial liquidity rather than financial commitment. They contend that the prime, if not sole, goal of the corporation is to create value for shareholders. For their success in maximizing shareholder wealth, they receive ample, even exorbitant, personal rewards, even as most other corporate employees experience lower earnings and less employment stability and security.

This alignment of strategic managers with public stockholders at the expense of investment in organizational learning is precisely what happened in the United States in the 1980s and 1990s. Encouraging these changes in business investment strategy was a transformation in the way wealth-holding American households saved for the future. From the 1960s to the 1980s fundamental changes in U.S. financial institutions encouraged American households to use returns from investments in publicly traded common stocks as the prime means by which they saved. In doing so, they inadvertently exacerbated the problem of long-term business investment in the United States by encouraging not only financial liquidity but also the strategic segmentation of top corporate managers.

At a time when technological challenges and international competition were beginning to demand investment in broader and deeper skill bases, the dynamic interaction of organizational segmentation and financial liquidity led many U.S. industrial corporations to flee from such investment. Insofar as these corporations have invested in organizational learning, they have done so through the development and utilization of narrower and more concentrated skill bases, thus limiting the range of productive activities and technologies in which U.S. companies can compete. This combination of organizational segmentation and financial liquidity is a prime cause of the erosion of sustainable prosperity in the United States in the 1980s and 1990s.

At the center of the shift from financial commitment to financial liquidity is the transformation of the role of the stock market in business

investment and in household saving over the past few decades. The conventional understanding of the role of the stock market in the development of the American economy is based more on fiction than reality. The fiction is that business enterprises rely on the stock market to fund long-term investment and therefore an increased flow of household saving into the stock market is favorable to long-term economic growth. The reality is that in the United States the stock market is not, and never has been, an important source of funds for long-term business investment. The reality is that the use of publicly traded shares as a means of household saving entails living off the past rather than investing for the future.

Throughout the twentieth century corporate retentions and debt, not equity issues, have been the main sources of funds for business investment. The lack of control public stockholders have retained over earnings of industrial corporations was not imposed on them by corporate managers or government regulators, as some have contended (Roe 1994). Rather it was a feature of public stockholding that portfolio investors not just accepted but favored.

The existence of a highly liquid stock market facilitated the growth of the U.S. industrial corporation. It did so, however, not because households as public stockholders provided companies with new sources of funds, but because it gave strategic managers control over financial resources internal to the enterprise that could be used for purposes of market expansion, vertical integration, and product diversification. When the growth of the enterprise was internal, retained earnings, leveraged if necessary with bonds, provided the financial resources for growth. When the growth of the enterprise was external (that is, through merger and acquisition), the replacement of the acquired firm's equity with the stock of the acquiring corporation provided the financial resources for growth.

A particular form of corporate growth that emerged full-blown in the 1960s was conglomeration. By relying on the prevailing business ideology that a well-trained general manager could manage anything, the conglomeration movement glorified strategic segmentation. In acquiring companies and consolidating financial decision making in the head office, the conglomerate stripped control from those who had been

the strategic managers of the acquired businesses. The conglomerates often retained former top managers as divisional heads, but failure to meet financial performance targets could lead to their replacement by head office personnel who, like the head office in general, had no idea of the processes of organizational learning or the strategies to shape them that the divisional businesses required to succeed.³

For Wall Street, as well as for many corporate managers, the conglomeration movement transformed the decision to merge with or acquire a business activity from a decision about investment in productive resources to one about investment in financial assets. The financial business of merger and acquisition entailed not only putting industrial enterprises together but also pulling them apart. From the perspective of productive performance, the divestitures that followed conglomeration had the potential for rectifying the problems of strategic segmentation that the conglomeration movement had exacerbated. But the movement also laid the foundation for the rise of a new financial market—the high-yield, or junk, bond market—that during the 1970s created both the incentive and ability for Wall Street to treat productive enterprises like financial assets. Far more than even the debt-financed conglomeration of the late 1960s, the use of junk bonds for buyouts and takeovers forced financial liquidity on U.S. industrial corporations.

Strategic managers need to have discretion if investments are to be made that generate returns and result in sustained competitive advantage for their enterprises and sustainable prosperity for the economy. Their investment decisions have a profound impact on whether their company invests for the future or lives off the past. The real problem for innovation and industrial development is not that strategic managers have discretion, but that they have become too isolated from the organizational learning necessary to develop and utilize productive resources. The market for corporate control does not demand an integration of strategy and learning. The use of stock-based rewards aligns the interests of top managers with stockholders, thus encouraging strategic segmentation, making it all the more certain that the integration of strategy and learning will not occur.⁴

If the goal is to encourage innovative enterprise, such segmented managers should not be in positions of strategic control over enterprise

resources. But the proponents of the market for corporate control accept strategic segmentation as long as the managers create value for shareholders by extracting resources from the corporation. Only by ignoring the process of innovation and its need for organizational integration and financial commitment can the proponents of the market for corporate control argue that the good manager is one who ensures financial liquidity.

Why do the American people seem to favor financial liquidity over financial commitment? In part the answer is ideology. Even those Americans who are losing out by the erosion of sustainable prosperity believe that the governance of private enterprise is none of their business. But ideology is not the whole answer. The fact is that a great many Americans—including the 45 percent who have pension coverage (Ghilarducci 1992, 3) and even many employees whose jobs are becoming more insecure—are sharing in a process that creates value for shareholders, even if it does not create sustainable prosperity for society as a whole. They share in the process of extracting value from the economy through a system of household finance that has come to rely increasingly on the prices and yields of corporate stock. By relying increasingly on the stock market to augment their income and saving, these relatively privileged Americans have developed a major stake in maintaining high returns on corporate stock.

Unlike the days when stockholding in any one company was fragmented among hundreds of thousands of household investors, over the past three decades institutional investors have become increasingly central to the American saving system; with ever-increasing holdings of stocks, they constitute the backbone of the market for corporate control. Households held 90 percent of all corporate equity in 1952 but only 48 percent in 1994. Pension funds, on the other hand, increased their share of corporate stock held by 25 percent from 1952 to 1994 and mutual funds increased their share by 10 percent. In 1996 and 1997 massive amounts of household saving flowed into mutual funds to reap the returns of the stock market.

Using the collective power of institutional investing, households have been able to extract higher yields out of the corporate economy. The search for higher yields is the *raison d'être* of U.S. institutional

investors. As we have seen, business enterprises have never relied to any significant extent on public stockholders to invest in the development and utilization of productive resources. Despite the “ownership” rights attached to stockholding, since the beginning of the twentieth century, when the market in industrial securities emerged, public stockholders have bought equities precisely because, in the presence of liquid stock markets, they do not have to commit their time, energy, or, with limited liability, additional money to the business enterprise in which they hold a security. In liquid stock markets public stockholders follow the Wall Street rule: If they do not like the returns on a stock, they should not try to exercise ownership rights to boost the returns, but should simply call their broker or click the mouse on their computer and be rid of their ownership stake (Lowenstein 1988, 91–93).

What the shift of stockholding to institutional investors has done for American households is to give them an alternative to the Wall Street rule through the collective power of institutional investing. During the 1960s the mutual funds, which had about 85 percent of their assets in stocks, increased their control over outstanding shares to more than 4 percent and played an important arbitrage role in the conglomeration movement by buying up large blocks of stocks that were rumored to be in play and selling them to the corporate raiders at higher prices (Editors of *Fortune* 1970, 142). In 1975 the institutional investors, now faced with inflation and low securities yields, pressured Wall Street to end fixed commissions on trading, setting the stage for a major increase in the volume of trading through the churning of investment portfolios (Vieter 1987). The participation of a network of institutional investors made it possible for Michael Milken to create the junk-bond market in the 1970s and to use it to launch hostile takeovers in the 1980s.

By the mid 1980s institutional investors could have a direct effect on corporations. American households could now put pressure on companies to get their stock prices up, and, as we have seen, the top managers of American companies were increasingly open to these demands. In the aftermath of the October 1987 stock market crash, major institutional investors, led by California State Public Employees Retirement System and its head, John Hanson, began to engage in “relational investing” to get companies to take actions that would increase the value of their

stockholdings (Blair 1995, chap. 5). As a result, the S&P index declined only 7 percent in 1988 and bounced back well over 21 percent in 1989.

Restoring Sustainable Prosperity

In the late 1990s sustainable prosperity in the United States requires that U.S. industrial corporations invest in broader and deeper skill bases than those in which they have invested historically. Investment in such skill bases can generate the higher-quality, lower-cost products that can give U.S. industrial enterprises sustained advantage in international competition. Such investments require strategic decision making by corporate managers who have the ability and incentive to allocate financial resources to learning processes that are collective and cumulative. Their ability and incentive to make such allocations derive from their integration into the processes of organizational learning and their control of committed finance.

However, over the past few decades organizational segmentation and financial liquidity—manifested by higher payout ratios and massive stock repurchases—have come to characterize the U.S. industrial corporation. To reform the system of corporate governance to achieve sustainable prosperity, one must compare the prevailing locus and exercise of strategic control with that which should be put in place. The debate over corporate governance and economic performance centers on three questions (O’Sullivan 1996, forthcoming): (1) Who should control strategic investment decisions in the corporation? (2) What types of investments should they make? (3) How should the returns on these investments be distributed?

Stockholder Control

Thus far in the United States the debate over corporate governance has been dominated by proponents of stockholder control.⁵ They view stockholders as the “principals” in whose interest the corporation should be run. They recognize that stockholders must rely on managers to perform certain functions in the actual running of the corporation, but believe that managers should function as the agents of the stockholders in

allocating corporate resources and returns. The problem of corporate governance is to ensure that the actions of managers as agents are aligned with the interests of stockholders as principals.

Proponents of stockholder control have argued, often with justification, that strategic managers of industrial corporations are ill-informed and self-serving in their allocation of corporate resources and returns and therefore do not create adequate value for stockholders. To increase the returns to stockholders, these proponents advocate, first, realigning managerial incentives through the use of stock-based rewards; second, using the market for corporate control to enable stockholders to take over companies and replace managers who misallocate corporate resources; and, third, distributing more returns to stockholders so that they can directly reallocate resources in ways that “maximize shareholder value.”

But why are stockholders the principals in whose interests the corporation should be run? Proponents of stockholder control assert that, as equity investors, stockholders are the only participants in the corporation who make investments in the corporation without any contractual guarantee of a return. The corporation has a contractual obligation to pay fixed-income claimants a specified remuneration (the market price of their factor input) irrespective of the performance of the enterprise as a whole. Insofar as stockholders secure a return on their investments, it is as residual claimants, and hence they alone have an interest in the size of the corporation's profit or loss; they have an interest in allocating corporate resources to their best alternative uses to make the residual as large as possible. The maximization of shareholder value will result in superior economic performance for not only the particular corporation but also the economy as a whole.

In response to the three corporate governance questions, proponents of stockholder control would reply that to achieve superior economic performance, (1) stockholders should have strategic control (2) that permits them (directly or through their managers acting as agents) to allocate their corporate resources to those existing alternative investment opportunities that offer the highest expected rates of return and (3) that enables them to determine the proportion of corporate returns that should be reinvested in the corporation and the proportion that should be distributed to them for reallocation elsewhere in the economy.

The stockholder perspective reflects deep-seated beliefs in the centrality of private property rights and market relations to the corporate economy. Yet, since the 1920s, if not before, the very existence of the corporation as a central and enduring entity in the U.S. economy has prompted a number of American economists to question the relevance of these beliefs (Veblen 1923; Berle and Means 1932; Schumpeter 1942; Galbraith 1967; Lazonick 1991). And they should, for the realities of successful industrial development in the United States and abroad during this century flatly contradict the basic assumptions of the stockholder perspective. Let us consider the problems with the perspective in terms of each of the three critical corporate governance questions.

Who should control strategic investment decisions in the corporation? Stockholders have not exercised strategic control in the U.S. industrial corporation during this century. The evolution of the corporate form in the United States entailed the separation of stock ownership from strategic control, and it was in the presence of that separation that U.S. industrial corporations made the investments in organization and technology that, by the middle decades of this century, enabled the United States to dominate the world economy.

Proponents of stockholder control argue that managers have acquired too much independent power over the allocation of corporate resources and returns, but do not explain how and why corporate managers, as so-called agents, who presumably could be hired, rewarded, and fired by stockholders, acquired such power. We have shown that, historically, U.S. corporate managers acquired power because they were the strategic decision makers who allocated corporate resources to organizational learning processes that enabled these corporations to be innovative and attain sustained advantage in the industries in which they competed. In general, the separation of stock ownership from strategic control was a precondition for placing such decision-making power in the hands of managers who were integrated into the collective and cumulative learning processes that made their enterprises innovative.

Indeed, even in the initial public offerings that separated stock ownership from strategic control, the investments in securities that public stockholders made were not used to finance investments in new productive capabilities, but to transfer ownership rights to revenues

that might be forthcoming from productive capabilities that had already been put in place. Hence, even with the rise of the publicly held corporation at the turn of the century, the new public stockholders never assumed the function of strategic decision making in U.S. industrial corporations.

On the contrary, American households and some financial institutions were enticed to hold stock because of the demonstrated revenue-generating capabilities of the going concerns for which the stock was issued. As the revenue-generating capabilities of these industrial corporations were sustained over the first three decades of this century, a highly liquid market in industrial stocks emerged, thus making stockholders all the more willing to make financial investments in corporate stock without having any knowledge of, or interest in, the strategic decision making processes that were determining corporate investments in productive resources. That is, the investment decisions of public stockholders have always been based on financial considerations, not productive considerations.

To recognize that the corporate managers who occupy positions of strategic decision making have become ill-suited to allocate resources to innovative investment strategies in no way implies that stockholders have either the incentive or ability to perform that function. Rather the problem for corporate governance is to understand why the current corporate managers have lost the necessary incentive and ability.

What types of investments should they make? Proponents of stockholder control argue that stockholders allocate their financial resources to those alternative investment opportunities that offer the highest expected rates of return. In doing so, the proponents assume that stockholders take the alternatives as given. There is no expectation that stockholders are engaged in making innovative investments that create new opportunities for generating returns, either directly in selecting their investment portfolios or indirectly through the activities of managers who are supposed to serve as their agents. Such a constrained view of the corporate investment process is not problematic for the proponents of stockholder control because, like the neoclassical theory of the market economy in which they root their arguments, the stockholder

perspective ignores the process of innovation as a central phenomenon in determining the performance of the industrial enterprise and the economy in which it operates.⁶

How far the stockholder perspective is from recognizing the centrality of innovative investment to the performance of the economy is demonstrated in a recent address to the American Finance Association by the perspective's foremost proponent, Michael Jensen. In his address, entitled "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems," Jensen highlights Joseph Schumpeter's concept of creative destruction as a seminal insight into the importance of "efficient exit" from an industry (Jensen 1993; see also O'Sullivan 1997). Yet, of all the economists of the twentieth century, Schumpeter demonstrated the centrality of innovative investments to the process of economic development. When, in *Capitalism, Socialism, and Democracy*, (Schumpeter 1942), he argued (in a famous passage that Jensen quotes) "the problem that is usually being visualized [by the economist] is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them," his concern was with the role of corporate enterprises in the innovation process, not with how (as Jensen would, quite incredibly, have his followers believe) corporate managers withdraw resources from the corporate enterprise.⁷ Schumpeter would have included "efficient exit" as a way in which "capitalism administers existing structures." In fact, public stockholders have nothing to do with the strategic allocation of resources to innovation, so it is not surprising that the proponents of stockholder control have nothing to say about Schumpeter's "relevant problem": how, through innovation, the economy engages in "creative destruction."

How should the returns on these investments be distributed? Indeed, in his subsequent writings, Schumpeter went on to stress the critical distinction between innovation that generates economic development and adaptation that simply takes existing investment opportunities as given (Schumpeter 1947). With its focus on extracting resources from corporations through efficient exit—of which "disgorging the free cash flow" (as Jensen has so evocatively put it) is the mechanism that particularly enhances stockholder control—the stockholder perspective is concerned only with adaptation. The perspective has no conception of, let alone a theory of, innovation.

Yet proponents of stockholder control favor distributing returns to stockholders so that they can reallocate them to their best alternative uses. The economic rationale for the distribution of returns to stockholders, as we have seen, is that they have placed their assets at risk in the enterprise on the understanding that they can lay claim to the residual—what we shall call “the gains of innovation”—that the enterprise generates. Deny the residual to stockholders, so proponents of stockholder control argue, and finance for industrial investment will disappear.

But the notion that public stockholders invest in productive assets has no basis in the history of successful industrial development in the United States. Public stockholders have never, as a general rule, put their financial assets at risk by investing in the productive assets of the industrial enterprise. Rather they have invested their money in the securities issued by successful enterprises on the basis of investments in productive assets that have already been made. They have been willing to place their money in these securities, not because they are claimants to the gains from innovative enterprise but because of the liquidity of these securities on financial markets.

By the same token, in the decades prior to the 1970s, when U.S. industrial corporations were most successful in international competition, the dividend policy of industrial corporations was to maintain the money level of dividends but not to share the gains of innovation with stockholders (Lintner 1956). Successful enterprises tended to use the gains of innovation for reinvestment in productive assets, including human resources, and to increase the earnings of employees. Moreover, industrial enterprises rarely sought to boost stock prices by repurchasing stock. Yet during this period there was no shortage of capital for investment in productive resources, either in going concerns or new ventures. Since the 1980s, however, as we have seen, through the transformation of Wall Street combined with the financial power of institutional investors, stockholders have been able to lay claim to a larger share of the returns of U.S. industrial enterprises, even as these enterprises have lost market share in the product markets in which they have competed internationally.

The stockholder perspective has nothing to say about the rise of the United States to a position of international industrial leadership during the first six or seven decades of the twentieth century. If it has anything

to say about the role of stockholder control over the last two or three decades, it is about how the enhanced power of stockholders to lay claim to corporate returns has exploited the vulnerability and contributed to the relative decline of American industrial enterprises in international competition. The stockholder perspective provides a rationale for Americans who hold corporate stock to live off the accumulations of the past; it does not provide a framework for understanding how the reform of corporate governance can help reestablish the social conditions for innovative enterprise and sustainable prosperity in the future. It is about destruction, not creation.

Managerial Control

One alternative to stockholder control that has been put forth recently focuses on managerial control.⁸ The managerial perspective differs significantly from the stockholder perspective in its answers to the three corporate governance questions, but it still falls short of providing an adequate framework for reforming corporate governance to generate sustainable prosperity.

Who should control strategic investment decisions in the corporation? Unlike proponents of stockholder control, proponents of managerial control recognize that the competitive success of the industrial corporation and the economy depends on investments in innovation that entail specialized in-house knowledge and that require time, and hence financial commitment, to achieve their developmental potential. The importance of investments in innovation creates a central role for corporate managers in determining the allocation of corporate resources and returns.

The fundamental difference between stockholder control and managerial control is captured in two quotes that appeared in a *Business Week* report on Kirk Kerkorian's takeover attempt of Chrysler in 1995. Michael Jensen, expressing the stockholder perspective, said, "What is the purpose of [Chrysler's] cash? It's to allow them [Chrysler's managers] to stay fat and lazy." Michael Porter, for managerial control, asked, "Who's going to make the investments if the presumption is that any management team will waste resources?" ("An Old Fashioned Feeding Frenzy" 1995).

Proponents of managerial control argue that, with appropriate advice from business academics and management consultants on such matters as “competitive strategy” and “core competence,” current managers should be allowed to allocate corporate resources. Proponents of managerial control provide no response to arguments that the current top managers have grown “fat and lazy” or that they have lost the incentive to invest for the future. Besides appropriate advice, all current managers need is “patient capital” that will enable them to see their investments in productive resources through to competitive success.

What types of investments should they make? Proponents of managerial control frequently use such terms as “capabilities,” “knowledge,” “skills,” “learning,” “factor creation,” and “innovation” as sources of “sustained competitive advantage” for the enterprise. This orientation alone sets them apart from the stockholder perspective and brings them into much closer contact with the real world of industrial development. In expressing a need for patient capital, moreover, they recognize (however implicitly) that the value-creating capabilities of productive assets, including human assets, result from a developmental process in which the enterprise must invest.

But, focused as the managerial perspective is on what existing managers think and do rather than on how they are integrated into the productive organizations in which they invest, it provides no analysis of the social foundations of innovation and industrial development. The managerial perspective sees the mind set of strategic managers as determining whether or not an enterprise invests in innovation. It does not see strategic managers as actors in a social environment that includes organizations and institutions; it does not address what determines the mind set of managers.

In particular, little, if any, attention is paid to the relation of strategic managers to the organization that they are supposed to be managing. For example, in his influential management book *Competitive Strategy*, Michael Porter (1980) devoted only 7 out of some 400 pages to what he calls organization, and these pages are bereft of any discussion that pertains to the social interaction of people within or across business enterprises. In a subsequent, and similarly influential, book, *Competitive Advantage*, Porter (1985) included a chapter entitled “Achieving Interrelationships,” but he confined the discussion to strategic relationships between business unit managers and even then felt compelled to

explain, by way of a footnote, why “this book on strategy must contain an unexpected chapter on organization” (384). The reason that Porter gave is that “organizational impediments” can sometimes get in the way of good strategy and therefore warrant study.⁹

How should the returns on these investments be distributed? While the managerial perspective ignores the relation of strategic managers to other participants in the process of industrial innovation, it focuses on their relation to the firm’s stockholders. Like the stockholder perspective, the managerial perspective views strategic managers as agents of stockholders, but it recognizes the need for strategic managers to make developmental investments if the enterprise is to achieve sustained competitive advantage. The perspective argues, therefore, for managerial autonomy in setting and implementing investment strategy and looks to large stockholders, such as wealthy individuals and pension funds, to be patient capitalists, that is, to provide managers with the control over financial resources that innovative investment strategies require. Hence the proponents of managerial control profoundly disagree with the stockholder control penchant for “disgorging the free cash flow,” mainly because they understand the importance of innovative investment strategies, what we have called financial commitment.

In looking to public stockholders to provide financial commitment, however, the proponents of managerial control are looking to a group of people who have never had the ability or incentive to support innovative investment strategies. Public stockholders are, and have always been, financial investors, not industrial capitalists. Some wealthy individuals have performed as patient capitalists, but they have done so as venture capitalists with a view to reaping returns by taking the new enterprise public once it has become a going concern (Wilson 1986; Lazonick 1992, 476–482). The most successful venture capitalists, moreover, have had a deep knowledge of the technologies being developed and close relationships with the key developmental personnel. Once a company has made the transition from new venture to going concern and has become publicly held, the key to continued financial commitment has been, as we have shown, the dispersion of stockholder power so that these outsiders to the innovation process, in their quest for financial liquidity, cannot reduce the corporate retentions that are the basic source of innovative investment.

In the 1950s and 1960s, when stock ownership was separated from strategic control and when the promise of sustainable prosperity prevailed, institutional investors did provide a degree of financial commitment by absorbing long-term corporate bond issues at interest rates that financial regulation kept low. This bonded debt was in addition to, rather than a substitute for, retained earnings. But as pension funds became increasingly important to the saving strategies of American households, they were influential in overthrowing financial regulation that constrained their ability to extract higher yields on their investment portfolios (the most important piece of legislation being the Employee Retirement Income Security Act of 1974), and they shifted their portfolios from bonds to stocks in their quest for higher yields. More recently, pension fund managers have been under even more pressure to secure higher yields on their portfolios as American households have increasingly turned to mutual funds to manage their retirement saving.

But even if U.S. institutional investors were inclined to be patient capitalists, the funds they could supply would not generate sustainable prosperity in the absence of a dramatic transformation in the way in which investments in corporate assets are made. To generate sustainable prosperity, strategic decision makers must invest in broader and deeper skill bases, and to have the incentive and ability to make such investments, these strategic decision makers must be integrated into the organizational learning processes for which the broad and deep skill bases form foundations. In the absence of these conditions, even those corporate employees who could benefit from investments in organizational learning are apt, through their pension funds, to demand high returns today rather than support financial commitment. In the absence of investments in organizational integration that can enable business enterprises to gain sustained competitive advantage, employees do not have any reason to believe that they will share in the gains of innovation in the future.

Organizational Control versus Stakeholder Control

Notwithstanding all the rhetoric about stockholders as residual claimants, once one recognizes the importance of organizational learning to the development and utilization of productive resources, one cannot avoid the

fact that, in generating innovation and industrial development, the most important investments that an enterprise makes are in human resources, not physical resources. In line with the conventional concept of property, corporate accounting principles count as *expenses* both the *investments* in human resources that take the forms of knowledge and skills and the *returns* to human resources that take the forms of higher incomes, better benefits, and more stable employment. Although business executives may be heard to say that human assets are their companies' most valuable assets, in corporate law and in accounting practice human capabilities are not treated as corporate assets because people cannot be owned. The conventional concept of property on which this law and practice are based, however, ignores the collective assets and collective returns that are the essential realities of the innovative enterprise. From our perspective—which one might call an “organizational control” perspective—sustainable prosperity, be it in the United States or elsewhere, requires not only that these investments in collective assets be made, but also that those whose knowledge, skills, and learning are central to the development and utilization of these collective assets have the expectation of sharing in the residual, that is, the gains of innovation.

With the increased power of stockholders to extract returns from corporations, a small but growing number of economists and politicians have argued that there are other corporate stakeholders, besides stockholders, who have a claim to corporate returns.¹⁰ The stakeholder perspective does not challenge the claims that stockholders are principals; it accepts that stockholders are residual claimants because they invest in the productive assets of the enterprise. Rather, the stakeholder perspective argues that the physical assets in which stockholders allegedly invest are not the only assets that create value in the corporation. Human assets create value as well. Individuals invest in their own human assets; to some extent these human assets are “firm specific” and hence employees make value-creating investments in their firm. In allocating corporate returns, the governance of U.S. corporations should recognize the central importance of these investments in human assets. The employees, along with the stockholders, should be accorded residual claimant status.

Who should control strategic investment decisions in the corporation? The organizational control perspective argues that strategic investment decisions should be made by participants in the corporation who are

integrated into the organizational learning processes that can generate products that are higher in quality and lower in cost than those previously produced. Such strategic integration provides the only basis for making investment decisions in the face of inherent uncertainty with any prospect, other than pure luck, of success. Whatever the hierarchical structure of authority and responsibility within the corporation for committing financial resources to innovative investment strategies, those who wield this authority and responsibility must be integrated into the relevant learning collectivities if they are to have the ability and incentive to transform inherent uncertainty into sustained competitive advantage.

The stakeholder perspective has no conception of strategic control primarily because it has no theory of the firm other than as a combination of physical and human assets that for some reason (labeled “firm specificity”) happen to be gathered together in a particular company. As in neoclassical economic theory, actual investment decisions are made by individual actors. The role of corporate governance is to get factor returns right, so that these individual actors are induced to make the firm-specific investments that the enterprise requires. Such a perspective focuses only on the relation between types of investment (physical or human, general or specific) and returns and hence cannot address how strategic control over the allocation of resources may or may not result in innovative investments.

What types of investments should they make? For the enterprise to remain innovative, investments must be made in organizational learning processes that can generate higher-quality, lower-cost products than currently exist. It is inherent in the innovation process that the breadth and depth of the skills that must be integrated to produce a particular product will change over time as technology develops. The most dramatic changes in the breadth and depth of organizational learning processes occur when, as has been the case of the Japanese challenge to American industry, business enterprises make productive investments in social environments that favor investments in broader and deeper skill bases. To promote sustainable prosperity, corporate governance must be concerned with investments in social organization that can generate innovation and competitive advantage.

The stakeholder perspective refers to firm-specific assets, but makes no attempt to understand the investments in organizational learning that make assets specific to a particular collectivity. Margaret Blair (1995) recognizes the need for an analysis of what she calls “wealth creation” in order to make the case for a corporate governance process that allocates returns to firm-specific human assets. But she provides no analysis of the process that generates higher-quality, lower-cost products. She asserts that investment in firm-specific assets can generate “quasi rents” for the investor, but does not specify under what conditions (technological, organizational, and competitive) such increased returns are generated or why they should be specific to a particular company.

How should the returns on these investments be distributed? The organizational control perspective argues that, to promote sustainable prosperity, returns must be reinvested in learning collectivities that can generate sustained competitive advantage. Investments in human assets take the form of remuneration for those engaged in the organizational learning processes. The need for financial commitment means that returns under the control of the organization are foundations for ensuring investment in learning processes that are collective and cumulative. But the changing character of the organizational learning processes that can generate competitive advantage means that cumulative disadvantages will eventually arise if the units of strategic control do not change accordingly. To promote sustainable prosperity, corporate governance must be concerned not only with allocating returns to those participants in the enterprise who are engaged in cumulative learning, but also with ensuring that, in the form of committed finance, control over returns devolves to strategic decision makers who are and remain integrated into the processes of organizational learning. At the same time, to promote sustainable prosperity, corporate governance must be concerned with limiting the allocation of returns to those interests, such as public stockholders, who can exercise claims on corporate returns, but who make no contribution to the processes of collective and cumulative learning.

Lacking a concept of strategic decision making and an analysis of the innovation process, the stakeholder perspective sees returns as attaching to specific human and physical assets and views the claims to these assets as being based on the investments that individual stockholders and employees make. The assumptions that both investment in and

returns from productive investments attach to individuals, even when these factors of production are combined in firms, preclude an analysis of the collective character of corporate investment and corporate returns. Hence the stakeholder perspective has no analytical basis for understanding a system of corporate governance that can allocate returns from existing productive investments to new productive investments that are collective. To promote sustainable prosperity, a system of corporate governance must facilitate collective decision making concerning the allocation of resources and returns.

Moreover, the stakeholder perspective has no theoretical basis for explaining the historical fact that public stockholders are not and have not been participants in this process of collective investment. Unlike those who receive returns for engaging in the learning processes that, with appropriate organizational integration and adequate financial commitment, can generate new sources of value, stockholders collect rents on past accumulation. Moreover, the size of these rents—the yields on their stocks—is not dependent on the scarcity value of the financial resources that they control but on their political power to lay claim to corporate returns. The stakeholder perspective does not address the changes in governance of U.S. corporations, and the governance of the U.S. economy more generally, that have enabled stockholders to increase their political power to extract higher returns. Nor does the stakeholder perspective address the implications of this historic change for the prospects for sustainable prosperity in the U.S. economy.

The problems of corporate governance and industrial development are not resolved by simply advocating that industrial corporations be run for other stakeholders, especially employees, besides stockholders. The danger is that different groups who can lay claim to shares of corporate revenues will, as has increasingly been the case with stockholders, extract corporate revenues whether or not their contributions to the generation of these revenues make these returns possible on a sustainable basis. The result of the creation of a “stakeholder society” might be to increase the propensity for major industrial enterprises and the economy in which they operate to live off the past rather than invest for the future.

If sustainable prosperity is the objective, proposals to reform the corporate governance system must be based on a theory of the innovative enterprise. Without such a theory, stakeholder arguments run the risk of encouraging other groups, besides stockholders, to become claimants to a given, and even diminishing, pool of returns. To avoid such a political and economic stalemate requires a conception of how investments in people working together in organizations can generate the returns in international competition that make sustainable prosperity possible. To make constructive contributions to the corporate governance debate, economists must shed the shackles—both methodological and ideological—of a dominant theoretical orientation that was never designed to understand how an economy develops. They must build their own capabilities for analyzing the processes of industrial innovation, international competition, and the social foundations of sustainable prosperity .

Notes

1. In March 1996, in the aftermath of the much publicized termination of 40,000 employees at AT&T and Patrick Buchanan's attack on the "corporate hit men," *The New York Times* ran a series of articles under the title "The Downsizing of America," which was subsequently released as a book with the same title.
2. For a well-known example—General Motors in the 1980s—see Ingrassia and White 1994.
3. For a detailed case study of a failed conglomerate acquisition, see Holland 1984. See also Lazonick and West 1995.
4. On the evolution of stock-based rewards in the compensation of U.S. corporate executives, see Lazonick 1992, 461–466.
5. The most vigorous proponent of the stockholder perspective in the United States has been Michael C. Jensen, an economist by training and a professor of finance at Harvard Business School. See, for example, Jensen 1986, 1989, 1993. See also Scharfstein 1988.
6. For a broad critique of the fiction of the market economy as propounded by neoclassical economists, see Lazonick 1991. For a characterization of the innovation process and a critique of theories of corporate governance that ignore this process, see O'Sullivan 1997.
7. For Schumpeter's perspective on innovation and the corporate enterprise, see Lazonick 1991, chap. 4.

8. The most vigorous proponent of the managerial perspective in the United States has been Michael E. Porter, an economist by training and a professor of strategy at Harvard Business School. See Porter 1990, 1992.
9. For a critique of Porter's failure to recognize the importance of organization for innovation and competitive advantage even as he presents material that describes organizational learning processes, see Lazonick 1993.
10. In the academic arena the most articulate proponent of the stakeholder perspective has been Margaret Blair, an economist by training, a former journalist, and a research fellow at the Brookings Institution (see Blair 1995). In the U.S. political arena the most vigorous proponent of the stakeholder perspective has been Robert B. Reich, a lawyer by training and recently secretary of labor (see Reich 1996). In his academic work, written in the years prior to his appointment to a position in the Clinton administration, Reich adopted the position that upgrading the skills of the American labor force could proceed without intervening in the governance of U.S. industrial corporations (Reich 1990, 1991). For a critique of Reich's views in this work, see Lazonick 1993.

References

- Atkinson, Anthony, Lee Rainwater, and Timothy Smeeding. 1995. *Income Distribution in OECD Countries*. Paris: Organization for Economic Cooperation and Development.
- Bell, Spurgeon. 1940. *Productivity, Wages, and National Income*. Washington, D.C.: Brookings Institution.
- Berle, Adolf A., and Gardiner C. Means. 1932. *The Modern Corporation and Private Property*. New York: Macmillan.
- Blair, Margaret M. 1995. *Ownership and Control: Rethinking Corporate Governance for the Twenty-first Century*. Washington, D.C.: Brookings Institution.
- Chandler, Alfred D., Jr. 1985. "From Industrial Laboratories to Department of Research and Development." In Kim B. Clark, Robert H. Hayes, and Christopher Lorenz, eds., *The Uneasy Alliance: Managing the Productivity-Technology Dilemma*. Boston: Harvard Business School Press.
- Clark, Kim B., and Takahiro Fujimoto. 1991. *Product Development Performance: Strategy, Organization, and Management in the World Auto Industry*. Boston: Harvard Business School Press.
- Corbett, Jenny, and Tim Jenkinson. 1996. "The Financing of Industry, 1970-1989: An International Comparison." *Journal of the Japanese and International Economies* 10, no. 1 (March): 77.
- Council of Economic Advisers. 1992. *Economic Report of the President 1992*. Washington, D.C.: U.S. Government Printing Office.

- Danziger, Sheldon, and Peter Gottschalk. 1996. *America Unequal*. Cambridge, Mass.: Harvard University Press.
- Diwan, Romesh, and Chandana Chakraborty. 1991. *High Technology and International Competitiveness*. New York: Praeger.
- Editors of *Fortune*. 1970. *The Conglomerate Commotion*. New York: Viking
- “Firms Ponder How Best to Use Their Cash.” 1995. *Wall Street Journal*, October 16, A1, A9.
- Funk, Jeffrey L. 1992. *Teamwork Advantage: An Inside Look at Japanese Product and Technology Development*. Portland, Ore.: Productivity Press.
- Galbraith, John Kenneth. 1967. *The New Industrial State*. Boston: Houghton Mifflin.
- Ghilarducci, Teresa. 1992. *Labor’s Capital: The Economics and Politics of Private Pensions*. Cambridge, Mass.: MIT Press.
- Hall, Bronwyn H. 1994. “Corporate Restructuring and Investment Horizons in the United States, 1976–1987.” *Business History Review* 68, no. 1 (Spring): 139.
- Harrison, Bennett, and Barry Bluestone. 1988. *The Great U-Turn: Corporate Restructuring and the Polarizing of America*. New York: Basic Books.
- Hartley, John R. 1990. *Concurrent Engineering: Shortening Lead Times, Raising Quality, and Lowering Costs*. Portland, Ore.: Productivity Press.
- Hayes, Robert, and William J. Abernathy. 1980. “Managing Our Way to Economic Decline.” *Harvard Business Review* 58 (July-August).
- Herz, D. E. 1990. “Worker Displacement in a Period of Rapid Job Expansion, 1983–1987.” *Monthly Labor Review*, May, 23.
- Holland, Max. 1984. *When the Machine Stopped: A Cautionary Tale from Industrial America*. Boston: Harvard Business School Press.
- Ingrassia, Paul, and Joseph B. White. 1994. *Comeback: The Fall and Rise of the American Automobile Industry*. New York: Simon & Schuster.
- Jensen, Michael C. 1986. “Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers.” *American Economic Review* 76: 323–329.
- . 1989. “Eclipse of the Public Corporation.” *Harvard Business Review* 67: 6–14.
- . 1993. “The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems.” *Journal of Finance* 48 (July).
- Lazonick, William. 1990. *Competitive Advantage on the Shop Floor*. Cambridge, Mass.: Harvard University Press.
- . 1991. *Business Organization and the Myth of the Market Economy*. New York: Cambridge University Press.
- . 1992. “Controlling the Market for Corporate Control: The Historical Significance of Managerial Capitalism.” *Industrial and Corporate Change* 1, no. 3: 461–466.

- . 1993. "Industry Clusters and Global Webs: Organizational Capabilities in the U.S. Economy." *Industrial and Corporate Change* 2, no. 1.
- . 1997. "Organizational Learning and International Competition: The Skill Base Hypothesis." Working Paper no. 201, The Jerome Levy Economics Institute, August.
- Lazonick, William, and Mary O'Sullivan. 1996. "Organization, Finance, and International Competition." *Industrial and Corporate Change* 5, no. 1.
- . 1997a. "Finance and Industrial Development: Part I, The United States and United Kingdom." *Financial History Review* 4, no. 1.
- . 1997b. "Finance and Industrial Development: Part II, Japan and Germany." *Financial History Review* 4, no. 2.
- Lazonick, William, and Jonathan West. 1995. "Organizational Integration and Competitive Advantage: Explaining Strategy and Performance in American Industry." *Industrial and Corporate Change* 4, no. 2: 261–264
- Lintner, John. 1956. "The Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes." *American Economic Review* 46 (May).
- Lowenstein, Louis. 1988. *What's Wrong with Wall Street*. Reading, Mass.: Addison-Wesley.
- Maddison, Angus. 1994. "Explaining the Economic Performance of Nations, 1820–1989." In William J. Baumol, Richard R. Nelson, and Edward N. Wolff, eds., *Convergence of Productivity: Cross-National Studies and Historical Evidence*. New York: Oxford University Press.
- Mowery, David C. 1986. "Industrial Research, 1900–1950." In Bernard Elbaum and William Lazonick, eds., *The Decline of the British Economy*. New York: Oxford University Press.
- Mowery, David C., and Nathan Rosenberg. 1993. "The U.S. National Innovation System." In Richard R. Nelson, ed., *National Innovation Systems: A Comparative Analysis*. New York: Oxford University Press.
- Nelson, Richard R., and Gavin Wright. 1994. "The Erosion of U.S. Technological Leadership as a Factor in Postwar Economic Convergence." In William J. Baumol, Richard R. Nelson, and Edward N. Wolff, eds., *Convergence of Productivity: Cross-National Studies and Historical Evidence*. New York: Oxford University Press.
- Nussbaum, Bruce. 1986. "The End of Corporate Loyalty?" *Business Week*, August 4.
- "An Old Fashioned Feeding Frenzy." 1995. *Business Week*, May 1, 34–36.
- O'Sullivan, Mary. 1996. "Innovation, Industrial Development, and Corporate Governance," Ph.D. dissertation, Harvard University.
- . 1997. "The Innovative Enterprise and Corporate Governance." Paper, INSEAD.
- . Forthcoming. *Contest for Corporate Control: Corporate Governance in the United States and Germany*. Oxford: Oxford University Press.

- Patch, Elizabeth P. 1995. *Plant Closings and Employment Loss in Manufacturing: The Role of Local Conditions*. New York: Garland.
- Porter, Michael E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.
- . 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.
- . 1990. *The Competitive Advantage of Nations*. New York: Free Press.
- . 1992. *Capital Choices: Changing the Way America Invests in Industry*. Washington, D.C.: Council on Competitiveness.
- Reich, Robert B. 1990. "Who Is Us?" *Harvard Business Review* 68 (January-February).
- . 1991. *The Work of Nations: Preparing Ourselves for Twenty-first Century Capitalism*. New York: Knopf.
- . 1996. "How to Avoid These Layoffs?" *New York Times*, January 4.
- Roe, Mark. 1994. *Strong Managers, Weak Owners*. Princeton, N.J.: Princeton University Press.
- Scharfstein, David. 1988. "The Disciplinary Role of Takeovers." *Review of Economic Studies* 55: 185–199.
- Schumpeter, Joseph A. 1942. *Capitalism, Socialism, and Democracy*. New York: HarperCollins.
- . 1947. "The Creative Response in Economic History." *Journal of Economic History* 7 (November).
- Staudohar, Paul D., and Holly E. Brown. 1987. *Deindustrialization and Plant Closure*. Lexington, Mass.: Lexington Books.
- U.S. Bureau of the Census. 1976. *Historical Statistics of the United States from Colonial Times to the Present*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Bureau of Labor Statistics. 1985. *Employment Earnings*. Washington, D.C.: U.S. Government Printing Office.
- . 1995. *Employment Earnings*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Department of Commerce. 1975. *Statistical Abstract of the United States 1975*. Washington D.C.: U.S. Government Printing Office.
- . 1983. *Statistical Abstract of the United States 1983*. Washington, D.C.: U.S. Government Printing Office.
- . 1995. *Statistical Abstract of the United States 1995*. Washington, D.C.: U.S. Government Printing Office.
- . 1996. *Statistical Abstract of the United States 1996*. Washington, D.C.: U.S. Government Printing Office.

- Veblen, Thorstein. 1923. *Absentee Ownership and the Business Enterprise in Recent Times: The Case of America*. New York: Huebsch.
- Vietor, Richard H. K. 1987. "Regulation-Defined Financial Markets: Fragmentation and Integration in Financial Services." In Samuel L. Hayes III, ed., *Wall Street and Regulation*. Boston: Harvard Business School Press.
- Wilson, John W. 1986. *The New Venturers: Inside the High-Stake World of Venture Capital*. Reading, Mass.: Addison-Wesley.

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