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# 1

# Invisible, Visible, and Vanishing Hands

> The modern diversified enterprise represents a calculated, rational response of technically trained professional managers to the needs and opportunities of changing technologies and markets. It is much less the product of ambitious and able individual entrepreneurs or of governmental policies.
>
> —ALFRED CHANDLER

> The enemy of the conventional wisdom is not ideas but the march of events.
>
> —JOHN KENNETH GALBRAITH

IN SEPTEMBER 1972, five years before the publication of his monumental work *The Visible Hand*, the great business historian Alfred Chandler delivered a presidential address to the Economic History Association at the Hotel du Pont, part of the general office complex of E. I. du Pont de Nemours & Company in Wilmington, Delaware. Over the course of the twentieth century, Chandler told the assembled economic historians, the supervision and control of American business had shifted decisively away from the individual entrepreneur and had become the function of teams of trained and specialized professional managers. This transformation, indeed, was the central fact of business history in the twentieth century. As the visible hand of expert management replaced the invisible hand of spontaneous markets, he explained, the modern civilization of managerial capitalism had come into being.

Du Pont itself furnished an excellent example. Whereas in the nineteenth century there had been but a handful of employees at the Wilmington headquarters, in 1972 there were perhaps ten thousand managers inhabiting the complex surrounding them. Warming to his argument, Chandler suggested



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that an elevated vantage point in New York City would reveal this transformation even more vividly. "One has only to look out on Park Avenue from the offices of the Social Science Research Council headquarters in New York and gaze on the forest of skyscrapers that house similar general office complexes to feel the presence of the modern managerial class," said Chandler.[1] "It is properly symbolic that while church steeples dominated the sky-lines of American cities in the eighteenth century, and smokestacks in the nineteenth century, central office skyscrapers have come to do so in the twentieth century."

In 1972, the Social Science Research Council still occupied space in the magnificent New York Central Building near Grand Central Terminal, erected by the New York Central Railroad just before the stock market crash of 1929.[2] In Chandler's account, it was the management of railroads like the New York Central and (especially) the Pennsylvania Railroad that had been the seedbed of twentieth-century managerial techniques. Two years before Chandler's talk in Delaware, however, the New York Central and the Pennsy, having recently merged to form the Penn Central Railroad, entered what was then the largest bankruptcy in the history of the United States. The New York Central Building was on its way to being renamed for a real-estate management firm.

If a business historian were to gaze out from the upper floors of what is today the Helmsley Building—but not from the offices of the SSRC, which has long since decamped to Brooklyn Heights—he or she would see few towering monuments to the managerial civilization of the twentieth century. The nearby Chrysler Building would still glow in the skyline, but it has always been a monument to Walter Chrysler the entrepreneur rather than to the Chrysler Corporation, which, after two federal bailouts and two mergers with European competitors, is now part of the Stellantis Corporation. Thirty Rockefeller Plaza, built during the depths of the Depression and long called the RCA Building (and recently if briefly the GE Building) is now owned by a media company. Most of the buildings visible today are anonymous towers, often referred to by their street addresses. A good many of them are occupied not by the general offices of manufacturing firms but by the kinds of financial concerns that, precisely as *The Visible Hand* was reaching bookstores in 1977, were beginning the process of dismantling the managerial corporation Chandler celebrated. Indeed, our business historian might easily watch the construction of the towering new headquarters of JPMorgan Chase at 270 Park Avenue, on the site of what was once the headquarters of the Union Carbide Corporation.

Even the highest floors of the Helmsley Building would not enable our business historian to see the general offices of today's preeminent corporations, none of which could even have been imagined in 1972. The often fancifully designed main campuses of the Big Five—Amazon, Apple, Facebook, Google, and Microsoft—are to be found on the San Francisco Peninsula and in

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Seattle.[3] At the end of the first quarter of 2021, *Fortune* ranked these five firms as the largest corporations in the United States as measured by value, with market capitalizations ranging from more than $800 billion (Facebook) to more than $2 trillion (Apple). These companies and their high-tech brethren have come under concerted attack from both sides of the political spectrum in the US as well as from the European Commission and other jurisdictions. To a significant and perhaps surprising degree, the policy debate is framed in terms of history—the history of the corporation itself, as well as the history of antitrust policy and industrial policy more generally. The corporations of the past are models for understanding those of today, and policies levied long ago are a font of precedents for today. This makes it crucial that we get the facts right and that we locate those facts within a coherent, sophisticated, and defensible intellectual structure.

The corporate landscape has morphed dramatically since Alfred Chandler admired it in the late twentieth century. Perhaps it is time to reassess the history of the American corporation and the business civilization to which it gave rise. Any reassessment would have to consider the tectonic changes of creative destruction, deregulation, disintegration, and entrepreneurship that characterized the last decades of the twentieth century. More than that, however, it would need to step back to reconsider and reframe the history of the corporation over the entire twentieth century.

The place to begin our reassessment is where Chandler began. In *The Visible Hand*, Chandler chronicled the rise of the multiunit organizational form in the late nineteenth and early twentieth centuries. Until at least the 1840s, he tells us, business in the United States had been carried out in ways little changed since the Italian city-states of the early-modern era. Although there did exist proto-managerial enterprises like plantations and military arsenals, the stages of production in the US were overwhelmingly small in scale; highly specialized; overseen by managers who were also owners; and, as Adam Smith had insisted, were "coordinated almost entirely by market mechanisms."[4] For Chandler, the revolutionary change after 1840 was the newly abundant availability of coal as a powerful energy source. Coal made possible an unprecedented scale of production that slowly destroyed the small-scale market-based system and called forth the modern managerial enterprise.

This transformation first manifested itself in the railroads. These were technologically complex, capital-intensive systems operating across an extensive geography. They demanded specialized skills that small owners seldom possessed, and they called for levels of investment those owners could not muster. The territorial reach of the railroads made delegation essential but monitoring costly. Investors had to pool their capital, ceding day-to-day authority to salaried specialists, including, for the first time, managers who supervised other

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managers. This was the true birth of managerial capitalism: "The members of the administrative bureaucracy essential to the operation of the railroad began to take control of their own destinies."[5]

By dramatically reducing transportation and communications costs, the railroads, along with the telegraph systems that shared their rights of way, began to make it profitable for manufacturing industries to take advantage of the new source of inanimate power, producing with economies of scale in large capital-intensive facilities and shipping the resulting goods by rail to distant consumers. In many key manufacturing industries, machines did not merely replace human labor but integrated tasks and performed them in new and more efficient ways.[6] This transformation was facilitated by the rise of mass distribution industries, including mail-order firms like Sears Roebuck and later large-scale brick-and-mortar chains like the Great Atlantic and Pacific Tea Company. As in the case of the railroads, and for essentially similar reasons, managerial hierarchies emerged in the industries of mass production and mass distribution.

By the early twentieth century, the large mass-manufacturing enterprises began integrating vertically, both backward into raw materials and forward into mass distribution. A system that had once been coordinated through the market by independent wholesalers, brokers, and retailers began to be coordinated by professional managers, who were essential to keeping high-volume, high-speed production and distribution humming. Soon these large enterprises also began to expand laterally. Whenever the firm found itself with excess resources—like plant capacity or, more typically, organizational capabilities and managerial know-how—it would diversify into products requiring capabilities complementary to those excess resources, thereby spreading fixed costs over more units of output.[7] In the beginning this meant diversifying into activities that made use of the byproducts of current production, as when meatpackers took advantage of the waste of the slaughterhouse to manufacture soap and related products.[8] But as the century progressed, diversification was driven increasingly by new capabilities created within formal research and development laboratories.[9] Du Pont, which invented nylon during the Depression, is a paradigmatic example. To manage the complexity of widespread diversification, firms like Du Pont pioneered the decentralized multidivisional or M-form organizational structure, which was almost universally adopted in large American firms after World War II.[10]

Over the course of the early twentieth century, then, large swaths of the American economy were withdrawn from the realm of the price system and entrusted to professional managers, who had at their disposal increasingly powerful scientific methods of accounting and forecasting. It was the ministrations of these managers, not relative prices, that equilibrated supply and demand and made sure that goods flowed smoothly from raw materials to final

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consumer. In Chandler's account, this mass internalization of economic activity was the result of the inherent superiority of conscious management over market prices in the face of high-throughput production. Although Adam Smith was right that a growing extent of the market demands increased specialization, it is also true, Chandler believed, that "increasing specialization must, almost by definition, call for more carefully planned coordination if volume output demanded by mass markets is to be achieved."[11]

I have long argued that this framing of the rise of managerialism is wrong.[12] It is most certainly true that the coming of the railroad and the availability of coal power fomented an organizational revolution that swept away a system coordinated by more or less spontaneous market processes and replaced it with one governed to a greater degree by managerial coordination. But that revolution was underpinned not by the inherent superiority of administrative planning in all times and places but rather by its contingent superiority in a specific set of historical circumstances. Indeed, only by seeing the managerial revolution as contingent can we understand why and how, in the years after 1972, a revolution of equally dramatic force and effect could begin undoing much of the diversification and vertical integration of the twentieth century. One of very many examples: after having briefly merged with competitor Dow, Du Pont is at this moment splitting itself into three more-specialized firms.[13] Already in 2016, Du Pont had closed its Central Research and Development Lab.[14]

To understand why resources are sometimes coordinated by the spontaneous mechanisms of the price system and sometimes allocated by administrative coordination, we need to consult another great twentieth-century student of organizational form, Ronald Coase. In a 1937 article that would eventually win him a Nobel Prize, Coase pointed out that the choice—the boundary—between market coordination and administrative coordination is determined by the costs of those alternatives, notably including what would come to be called transaction costs.[15] This implies that the boundary between market coordination and administrative coordination can shift—in either direction—in response to changes in the underlying costs of organization.

The analytic exercise of comparing the relative costs of alternative organization forms came to be called *comparative-institutional analysis*. In almost the whole of the vast literature that emerged after Coase, such an exercise was understood to be about comparing fully formed versions of the organizational structures under study. Oliver Williamson, who would go on to win his own Nobel Prize, announced that "in the beginning there were markets," which he meant not as an anthropological claim but as methodological injunction to compare the ideal type of fully formed markets with the ideal types of alternative organizational structures.[16] I have long insisted that although it can often be a valuable analytical exercise, comparing ideal types can just as often mislead

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and can obscure the real organizational problems of history.[17] In the beginning, there very often *weren't* markets, or at any rate markets appropriate to rapidly changing relative scarcities and innovative new technologies. Markets do not exist in isolation. They require a background structure of market-supporting institutions. These can be legal and regulatory structures, but they can also be complementary and supporting market systems, notably including financial markets. When economic change demands a systemic rearrangement of economic activity, existing market-supporting institutions may not be able adapt as quickly as can administrative coordination. Integration can sometimes overcome the *dynamic transaction costs* of economic change, in effect by creating the necessary supporting institutions *within* the firm.

A historically contingent version of comparative-institutional analysis helps us to understand what may well be the central organizational paradox of the twentieth century. At the end of the nineteenth century, burgeoning markets and reduced transportation and communication costs led to *increased* integration. Yet at the end of the twentieth century, even larger markets and much lower transportation and communication costs led to *less* integration. The resolution of the paradox, I argue, is that in the late twentieth century, market-supporting institutions, including financial markets, had developed to such an extent that they could underpin a far more decentralized way of creating and administering even high-throughput production and distribution.

Consider what may be a paradigmatic comparison, the enterprises of Gustavus Swift in the nineteenth century and Michael Dell in the twentieth century.[18] Both entrepreneurs set up high-throughput production and distribution systems. Unlike Swift, who had to integrate vertically to create his system, Dell could plug into an array of already-existing capabilities available from the market. Indeed, Dell succeeded not in spite of having used the market but *precisely because he did*.[19] In addition to thick markets for computer parts, Dell could take advantage of what George Stigler called "general specialties": Swift had to become a maker of railroad cars in order to ship his refrigerated dressed meat, whereas Dell could simply hire Federal Express or UPS to deliver personal computers.[20]

If, as I claim, the evolution of market-supporting institutions tends to shift the Coasean calculus in the direction of markets and away from administrative coordination, then why did it take so long for the managerial corporation to become undone? Calendar time was elapsing, but markets and market-supporting institutions didn't seem to be catching up. "Indeed," as Chandler wrote, "the years after World War II mark the triumph of modern business enterprise."[21] In the middle of the century, forward integration among manufacturers seemed to be increasing rather than decreasing.[22] And at the beginning of the 1960s, the large corporations of the early century not only

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continued to dominate the *Fortune* 500 but actually appeared to be more fully entrenched than ever.[23] Why?

Maybe we can chalk it up to inertia—what is often grandiosely, if generally imprecisely, called path dependency. Once the system of American enterprise embarked upon the trajectory of managerial control, it was kept moving by a kind of organizational momentum. As Chandler put it, using the words of Werner Sombart, "the modern business enterprise took on 'a life of its own.'"[24] This may well be a part of the story. But it is a central thesis of this book that other, more powerful forces account for the long dominance of the managerial corporation in the middle of the twentieth century. One of these should be obvious to anyone who looks back on the century: at its center were the great catastrophes of war, depression, and war. Another, often related, factor was government policy, notably but not exclusively in the forms of regulation, antitrust, intellectual property, and industrial policy, which had the effect—sometimes intended, sometimes unintended—of buttressing the large managerial corporation and insulating it from the impulses of change.

Especially in Europe, the period from 1914 to 1946 seemed to coalesce into a single disaster. Winston Churchill and Charles de Gaulle were among the many who would talk of a "Second Thirty Years War."[25] Yet the middle years of the century were anomalous beyond just thirty years. The entire span from 1914 to 1973 or so was a break from a clear trend of globalization and market integration that had begun at least as far back as the 1820s.[26] Deirdre McCloskey refers to the entire period 1914–1989, from the beginning of World War I through the end of the Cold War, as the "Great European Civil War."[27] Writing in the context of income inequality, some prominent authors have called attention to just how unusual and remarkable the middle years of the century were. To Walter Scheidel, the period 1914–1973 was "the great compression," and to Peter Lindert and Jeffrey Williamson, it was "the greatest leveling of all time."[28] This compression and leveling was the result of the Depression as well as of powerful government intervention in the economy in response to depression and war.[29] Both wars were devastating "total" wars, fought not by military specialists but in effect by entire societies. As soldiers were conscripted, so too were civilian labor and capital. The rich—meaning business and industry—were hit with high marginal income tax rates, new "excess profits" taxes, and the stealth tax of inflation. The political response to the Great Depression would borrow, elaborate on, and anticipate many wartime institutional structures. In its own way, the New Deal would also be a kind of total war, empowering political modes of resource allocation against market modes.

Some of the cataclysm that occurred in the middle decades of the century was the result of macroeconomic forces, and it is another theme of this book that such forces were far more significant for the organization of industry than

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has generally been recognized. In ways that I detail, the Depression destroyed market-supporting institutions, and the internal institutional structure of the firm was forced to compensate. The regulatory policies of the New Deal were especially powerful in bolstering and locking in the organizational form of the large corporation. During World War II, the federal government controlled and frequently superseded markets, while military procurement favored the managerial enterprise. During the entire period from the beginning of World War I through the end of World War II—putting aside the decade of the 1920s, which offers a tantalizing glimpse of a possible counterfactual world—the market was functioning poorly or not at all.

It was the destruction and suppression of well-functioning markets, I argue, that gave relative advantage to managerial coordination in large multiunit enterprises. Far from being an inherently superior mode of coordination, resource allocation within the structure of the highly integrated and diversified corporation was a second-best form given artificial prominence, and an extended life, by the great catastrophes of midcentury and the political responses they elicited. It was only in the years after the watershed of the early 1970s, after the inflation of the Vietnam War and the end of Bretton Woods, that market coordination would enjoy a resurgence, energized by the institutional innovations of deregulation and by the entrepreneurial creation of decentralized new technology.

The great military conflicts of the century appeared to many as illustration of successful rational planning. The reality, we will see, was quite different. One of the leitmotifs of the century was standardization. Henry Ford's mass production of the Model T taught that when demand was high and constant, standardization offered tremendous economies in production. War frequently offered a similar environment of high demand, without the constraint of a market test. But at the same time, battlefield realities demanded rapid change and innovation, which are inherently refractory to standardization and mass production. Planning could not foresee change, and administration could not cope with innovation. Indeed, I will argue, war planning operated as effectively as it did because in the end decision-making was surprisingly decentralized.

It is quite true, as Chandler and others have argued, that the Great Merger Wave at the end of the nineteenth century increased the separation of ownership from control as many founders sold out and as administrative staffs became necessary to run extended enterprises. We will see, however, that the history of this idea is more tangled than most present-day economists tend to recognize and that the early-century understanding was quite different from the later-century version. We will also see that the phenomenon itself was not nearly as all pervasive as is widely believed. In fact, the majority of large firms in the early twentieth century were controlled by owners, significant blockholders, or investment banks like J. P. Morgan, which played the role of what we would now call private

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equity. To a notable extent, Morgan and other financiers like Pierre du Pont, Andrew Mellon, and John D. Rockefeller exercised control over what were effectively extended business groups. Even in many widely held corporations, dynamic figures like Theodore Vail, Alfred P. Sloan, and David Sarnoff—what Harold Livesay called "galvanic personalities"—exercised considerable personal control.[30]

Before the US entered World War I, the British and the French were purchasing materiel and munitions from American companies in vast quantities. Most of this buying was organized through the House of Morgan, which used its business-group structure and widespread industry connections to become the largest buyer in the world. After American entry, the Wilson administration refused to adopt the purchasing structure Morgan had set up, wasting nearly a year attempting to create its own procurement system from scratch. What would become the War Industries Board under Bernard Baruch put in motion centralized administrative control of war production, setting priorities from above, handing down demands for widespread standardization, and even attempting to set prices. But in the end decision-making had to be decentralized to trade associations, many of which the war helped to create, in order to take advantage of the local knowledge of suppliers and manufacturers. In effect, the industrial effort of World War I was ultimately prosecuted with a structure not unlike the M-form that would soon take root in the corporate world.

In the postwar civilian arena, that form of administrative coordination was also in practice far less an instantiation of rational foresight and planning than Chandler's model suggests. In the ideal, the multidivisional or M-form structure, widely adopted in the middle of the century, would decentralize authority for day-to-day operations to semi-independent business units while assigning strategic decisions to a central office guided, in principle at least, by scientific methods of forecasting, accounting, and control. In theory, there would be little room for, and little need for, entrepreneurial judgment and action. In reality, the M-form seldom functioned the way it was drawn up. Even at General Motors, Chandler's paradigm application of the M-form, central managers often collaborated with, and frequently interfered with, the supposedly independent divisions.[31] In the end, local knowledge, not to mention local incentives, resided at the level of the divisions, and formal planning methods could not transmit the necessary rich information let alone create the necessary structure of incentives.

The 1920s was a period of broad-based growth, one that encompassed far more than the burgeoning high-tech industries of the day like radio and the automobile.[32] All of that came to a cataclysmic end with the onset of what was arguably the century's signal catastrophe—the Great Depression. Even keeping in mind the loss of American lives in the world wars and other tragedies, it

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is arguable that on the whole 1933 was the worst year of the twentieth century in the United States.[33] On March 3, 1933, the Dow Jones Industrials Average was 53.84, an 86 percent drop from its peak in 1929.[34] Real gross domestic product (GDP) per capita had fallen almost 29 percent and stood no higher than it had been in 1901.[35] The number of commercial banks in the US had fallen from some 25,000 in 1929 to little more than 14,000.[36] The US was producing only two-thirds as many consumer goods in 1933 as in 1929, and Detroit was selling only about half as many cars.[37] Unemployment sat at 25 percent.[38]

Economic historians now broadly agree that the severity of that episode was the result of monetary mismanagement by an inexperienced and politicized Federal Reserve System, whose powers had grown much faster than its competencies in the years after its founding in 1914.[39] By losing control of the money supply and failing to act consistently as a lender of last resort, the Fed permitted the economy to slip into what the noted contemporary economist Irving Fisher described as a debt-deflation spiral.[40] As deflation raised the costs of indebtedness, borrowers rushed to pay off their loans, which, in a system of fractional-reserve banking, caused further deflation, leading more borrowers to pay off their loans—and so on in a vicious cycle. Many, of course, went bankrupt.

This process did violence to the real economy, as it took off the board countless valuable nodes of market coordination, including, as future Fed chair Ben Bernanke would later document, financial intermediaries.[41] Transacting in markets became more and more costly. Small firms, which relied heavily on market institutions, began to fail as their borrowing costs soared and their customers disappeared. By contrast, the largest and most integrated firms, far less reliant on the external capital markets, began to accumulate cash internally.[42] The cash holdings of American firms more than doubled between the early 1930s and the mid-1940s.[43] This cash was concentrated in the largest firms, reflecting an attempt to accumulate precautionary savings in a highly uncertain macroeconomic and political environment. Because there was virtually no stock issue during this period and debt was being retired, retained earnings accounted for more than 100 percent of financing for the American corporate sector as a whole.[44]

The recovery from the Depression had long been understood in Keynesian terms. Economic historians have recently begun converging on the opposite view: the multiplier effects of Keynesian fiscal policy were in fact tiny, and the crucial event that put the economy on the road to recovery was in fact an act of monetary policy, Franklin Roosevelt's devaluation of the dollar against gold.[45] Cheaper dollars began to entice gold to flow from abroad to reinflate the economy. Yet the recovery was a slow and relatively "jobless" one. The Depression had destroyed much of the market economy, especially in the small-business

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sector. Although shakeouts had already begun in many industries like automobiles and radio, the Depression accelerated the process.

Alexander Field has argued that especially in the long recovery after 1933, the Depression was period of technological advance and productivity growth.[46] Of necessity, much of that technological change took place increasingly within the boundaries of large integrated firms. In the early twentieth century, innovation had been driven importantly by individual entrepreneurs operating within a thriving market for intellectual property. Those inventors sold their patents, or sometimes sold what amounted to small start-ups, to firms that could further develop their ideas. In the 1920s, a significant number of the most valuable patents held by large firms originated outside those firms' own R&D labs. Smaller enterprises that developed or acquired technology could avail themselves of well-functioning securities markets as well as of what we would now recognize as venture capital. Regional securities exchanges were especially important for these small firms. The Depression made the financing of independent invention far more difficult, and the high fixed costs of New Deal securities regulation fell more heavily on the smaller local exchanges. Large integrated firms came to dominate technological discovery not because of the inherent superiority of in-house R&D but because large firms with corporate labs were better able to withstand the Depression.[47] The Depression also created rampant excess capacity within the large firms themselves, and those enterprises were well-positioned to take advantage through diversification as the economy expanded.[48]

New Deal financial and industrial policies also reinforced the hegemony of the large integrated firm. Banking and securities regulation worked to roll back financial innovation, to limit competition, to segment markets, and generally to keep external capital markets weak relative to the internal capital markets of the large firms. The US would emerge from the Depression with a more highly regulated financial sector than any other developed country.[49] The New Deal's greatest achievement in this regard was probably the Public Utility Holding Company Act of 1935, which forbade the pyramidal holding-company structure in utilities.[50] The Act was only one part of a concerted and ultimately successful attack on the holding company, and thus on the business group more broadly.[51] With that structure increasingly unavailable, the Chandlerian corporation became even more important as an organizational form for the coordination of large-scale production.

Especially at the beginning of his first administration, Franklin Roosevelt was guided by his famous Brains Trust, including Adolf Berle and Rexford Guy Tugwell. Both saw the Depression as a real not a monetary phenomenon: it was a failure of capitalism. Private decision-making led naturally to "imbalances" in the economy, they believed, which could be corrected only by

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conscious sectoral planning.[52] Persistently confusing the manipulation of real relative prices with the desirability of raising the price level through inflation, the New Deal, with the strong backing of industry, set about creating artificial scarcities throughout the economy at a time of widespread deprivation and hardship. The principal engine of this effort was the National Industrial Recovery Act, which endowed a wide array of industry cartels with the enforcement powers of government. Although the Supreme Court would invalidate the Act, industry-specific legislation was often forthcoming as a substitute; and, by the end of the 1930s, significant segments of American industry were encased within an elaborate apparatus of economic regulation, some of it, as in rails and telecommunications, antedating the New Deal. In a few cases, these regulatory structures benefited decentralized industries like trucking, but they always restricted entry and segmented markets along technological dimensions in ways that discouraged innovation, especially across preexisting boundaries.

Tugwell famously held the view that wartime production demonstrated most clearly the benefits of conscious sectoral planning.[53] The US would soon discover that it was in fact under conditions of war planning that the economy would suffer most palpably from endemic shortages and imbalances. As we saw, the problems of planning in the first war were severe, and they were limited only by the brevity of the country's participation in that conflict. Mobilization for World War II was not only far more extensive but also far more centralized. Especially in the beginning, American mobilization was organized along functional lines rather than anything like the de facto M-form lines of the War Industries Board. Partly because of this conscious organizational choice, the burden of mobilization for World War II fell not on trade associations but on the large integrated corporation, which, as I have suggested, had already gained relative prominence during the Depression and the New Deal. Within the large corporation, however, procurement decisions, and the building of capabilities for war, were not in the end directed in detail by central management but were highly decentralized to business units, which improvised in entrepreneurial fashion, often with astonishing results. Decentralization deserves a good deal of credit in the generation of new technology as well, from penicillin to the B-29 bomber, which were instances of systemic innovation pursued through collaborative research and product development.

Yet the war was not on the whole the miracle of innovation and productivity, nor the font of postwar productivity growth, that it has often been made out to have been. Field has calculated that total-factor productivity—a measure of how effectively an economy is using its inputs—actually fell by 1.34 percent in manufacturing over the period 1941–1948.[54] By his calculation, in the last two year of the war, TFP in manufacturing fell by 6.6 percent and 9.2 percent. Quite apart from negative supply shocks, notably the loss of

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natural-rubber supplies from the East Indies and the conscription into the military of vast numbers of productive workers, these declines in productivity reflected the hasty and radical reorientation of production toward highly specialized military goods as well as—perhaps especially—the inevitable shortages, hoarding, and chaos of a nonmarket system of resource allocation. As we will see, wartime mobilization favored the large integrated enterprises that were at its center, often leaving small firms the victims of "priorities unemployment" despite the desperate need for increased output.

To the surprise of contemporary Keynesian economists, the return to a market-based system of resource allocation at war's end, along with the creation of a stable monetary regime, ushered in a period of relative growth and prosperity now remembered as a golden age. But even in the postwar period, a matrix of government policies worked to advantage the large integrated corporation.

The belief that wartime military spending inevitably energizes civilian economic growth, and that military research typically "spills over" to civilian innovation, is a foundation stone of so-called industrial policy, which, as it periodically does, has come back into fashion today on both sides of the political spectrum.[55] If government can direct the process of innovation in time of war, why can it not do so to advantage in time of peace? Perhaps the state can even act "entrepreneurially" to plan in detail the direction of civilian technological development. The following pages will dissent from this view and affirm the traditional finding among scholars of science and technology policy.[56] The state is best able to boost technological change in its role as a buyer for its own uses, especially if the technology is young enough, and inchoate enough, that the effects will indeed spill over to civilian uses. But the state is far less effective in directly supporting commercial R&D, and it is least effective when attempting to pick winners. Early federal policy toward silicon transistors may be a good example. As an astute and self-interested consumer, the Defense Department bought its transistors mostly from new and young firms like Fairchild Semiconductor, thus helping to direct the industry onto a trajectory of unprecedented technological advance. But when it gave out R&D money for semiconductors, the government favored large integrated systems firms, and little of that funding paid off.[57]

History is littered with episodes of failed state entrepreneurship, from ill-fated steel, gunpowder, and nitrates projects in World War I to the supersonic transport of the 1960s. The government has indeed often lavished funds on the corporate sector to spur commercial innovation, but, while happily accepting such funds, in both the US and Japan—widely believed in the 1980s to have been a definitive example of successful industrial policy—firms did their best to contest and evade all attempts at cooperative research and planning. Moreover, the government routinely subsidized projects that the private sector

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would have undertaken on its own.[58] Projects often touted as evidence of successful state entrepreneurship turn out on examination to have been the product of extremely hands-off funding coupled with highly decentralized decision-making and spontaneous cooperation. A good example is the Internet, whose Defense-funded precursors were crucial far less for the technology they developed than for the regime of open standards and protocols they put in place. We will also see that American industry has frequently been shaped by back-door industrial policy, as industrial regulations of various sorts distorted technological choices and retarded technological advance.

Broadly understood, industrial policy extends beyond support for R&D to encompass antitrust policy and intellectual property rights.[59] Chandler always insisted that the managerial corporation was the product of technological and economic forces, never of public policy. The one exception he made to this dictum was antitrust policy: Chandler championed the view that enforcement of the Sherman Antitrust Act around the turn of the twentieth century created powerful incentives for business to avoid interfirm agreements and the holding-company form and to organize instead in the legally safer structure of an integrated multiunit operating company. In bits and pieces, a variety of economists and historians have made similar arguments, often as asides, about specific periods.[60] At many times and in many ways, antitrust policy has worked, often unintentionally, to benefit large integrated enterprises, frequently at the expense of the smaller firms that were the intended beneficiaries. This book examines this thesis carefully and carries it consistently through the century.

To understand how antitrust policy can affect organizational form, we need to return to Coase. Both Chandler and Coase—or at any rate the Coase of 1937—seem to offer us a Manichaean choice: on one side of the organizational boundary lie spontaneous markets in which fully independent sellers are guided solely by market prices; on the other side lie integrated enterprises in which resources are directed solely by the administrative planning of salaried managers. The only choice is between fully invisible and fully visible hands. In reality, of course, the topography of organizational choice is far more variegated—and far more interesting. In any complex manufacturing and distribution system, each stage of production requires the development of specialized knowledge, experience, and skills, what G. B. Richardson called *capabilities*, that are different from those called for by other stages.[61] Buying livestock, slaughtering, building rail cars, organizing ice houses and warehouses: these are all complementary parts of the chain of production. So are order-taking, motherboards, video cards, microprocessors, and delivery logistics. For production to operate smoothly at high volumes, these complementary activities must somehow be coordinated. But, Richardson wrote, "there is no unique single way in which complementary investments come to be

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co-ordinated. Co-ordination may occur spontaneously without the intervention of measures expressly adopted to that end; under different circumstances, it may be brought about by means of agreements, of one kind or another, between independent firms; in other circumstances, it may require deliberate planning, such as is possible only when the different investments are under unified control."[62]

Throughout history, much of economic coordination has always taken place through "agreements, of one kind or another, between independent firms." This was true even in the pre-Chandlerian world in which generalist merchants coordinated the flow of goods through the American economy.[63] "The market" is as much about complex interfirm agreements as it is about the spontaneous and anonymous coordination of spot contracts through the price mechanism. Complex interfirm arrangements take a wide variety of forms, including various kinds of business-group structures.[64] We will encounter and analyze many of these arrangements as our history proceeds. Prominent examples like tying arrangements, franchising, exclusive dealing, and resale-price maintenance merely scratch the surface of possibility. The important point is that interfirm arrangements are *substitutes*—and very often superior substitutes—for integration within a single ownership structure. To the extent that public policy penalizes such alternatives, it creates a powerful incentive to withdraw coordination from the visible market arena and to sequester it within the bounds of a single organization, which can provide—often at a cost—a legally safe internal simulacrum of the proscribed arrangements.[65]

Because they are neither fish nor fowl, because they seem to conform neither to the model of the anonymous market nor to that of the fully managerial firm, complex interfirm arrangements can easily seem mysterious—and they have often been assumed ipso facto nefarious. They are "unfair" methods of competition. They are "anticompetitive practices." Like all contracts, complex interfirm arrangements are typically about exclusion. Thus it has always been easy to understand them as "contracts in restraint of trade," language borrowed from the common law by the Sherman Antitrust Act of 1890. It would not be until the second half of the twentieth century that economists elaborating on the ideas of Coase would begin to understand such contracts as frequently representing solutions to vexing problems of uncertainty, incentives, and transaction costs. As we will see, the ability to write contracts of exclusion is often crucial to the smooth functioning of markets.

This is far from saying that American antitrust policy was propelled primarily by ideas, let alone by economic ideas. Politics and ideas were ever intertwined. As many have observed, it is significant that the uniquely American innovation of antitrust emerged during the same period of economic ferment that brought forth the large Chandlerian corporation and destroyed the earlier system of

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localized production and trade. As a prelude to the twentieth century, chapter 2 will offer a portrait of the nineteenth-century origins of industrial regulation, discovering those origins to have been deeply imbedded within the political economy of the United States in that period. To a surprising degree, that political economy would very much include monetary policy, tightly interwoven with tariff policy, the interests of competitors, and widespread if unfocused fears about bigness and centralization—fears not unfamiliar to our own era—in a country experiencing a rapidly changing economic geography.

The turn of the twentieth century saw the completion of the Great Merger Wave.[66] Local enterprises in many industries took advantage of the newly available state-chartered holding-company form of organization to coalesce into geography-spanning managerial enterprises. The turn of the century also saw the beginnings of a new political economy, driven by the emergence of an urban Progressive movement that replaced rural populism as arguably the country's dominant ideological force.

Like those who formed and managed the large new industrial firms, many Progressive thinkers saw centralization as both inevitable and desirable. Like Alfred Chandler—very much a descendent of this Progressive tradition—these thinkers held that scientific techniques had solved the problems of industrial management. By extension, scientific management would also be able to solve the problems of political administration, which could—indeed must—be entrusted to experts. Theodore Roosevelt, who instantiated the most centripetal of these views, famously believed he could distinguish "good trusts" from "bad trusts," and he pushed strongly for a powerful executive commission, under his personal control, that would institutionalize such judgments by asserting federal political authority over industry. Roosevelt's initiative foundered; his successor, the more judicially oriented William Howard Taft, was glad to restore antitrust to the crime-tort model of the Sherman Act.[67]

From the beginning, some politicians, jurists, and writers explicitly understood antitrust to be a way of protecting existing small competitors from the efficiency, innovation, and lower prices of the emerging large corporations. This goal had both a political and an ideological dimension. Small competitors were (and are) numerous and thus politically powerful. At the same time, many thinkers throughout the century, notably including Louis D. Brandeis, saw the matter in moralistic terms: individual ownership of a small business provides opportunities for self-expression and character-building that would be denied to those employed within large organizations. A society of smallholders is simply a better society than a corporate society—even if it is a poorer one. Thus, Brandeis believed, antitrust should be about creating and maintaining a decentralized industrial structure for its own sake, not about economic efficiency or the material well-being of consumers.

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When the like-minded Woodrow Wilson ascended to the presidency in 1913, Brandeis had his chance. Although he was himself a firm believer in the powers of scientific management, Brandeis also believed that large size was not efficient.[68] Thus, to maintain decentralization, it would be necessary merely to outlaw practices that gave what he believed to be artificial advantages to large size. It would be necessary merely to enumerate and forbid "anticompetitive practices," which, Brandeis believed, were well understood and unambiguous. (One William H. S. Stevens, soon to become the assistant chief economist of the Federal Trade Commission, enumerated precisely eleven "unfair" practices in 1914.)[69] In the attempt to write legislation, however, it became immediately clear that the complex interfirm arrangements and other behaviors to be proscribed were far from well understood; and even small-business constituencies began to feel threatened by the criminalization of what was to them ordinary business contracting. Brandeis was forced to persuade Wilson to accept the hybrid system that would reign for the remainder of the century and beyond: a vague and qualified enumeration of anticompetitive practices lain atop the Sherman Act, plus the creation of an expert commission—the Federal Trade Commission—that was to help adjudicate the resulting ambiguities but did not possess the unified central authority over business that Teddy Roosevelt had wanted.

This history is of considerable significance to today's discussions of antitrust policy, since those debates are centered around a call to return to the views of Brandeis.[70] Indeed, proponents of the "neo-Brandeisian" approach are currently ensconced in Washington, including at the FTC, which proposes once again to try to define and enumerate "unfair methods of competition" through administrative rulemaking.[71]

It is a central tenet of the neo-Brandeisian view that the antitrust laws did not originally have consumer benefit, let alone economic efficiency, as their goal.[72] The goal of consumer benefit, we are told, was not an official guidepost of antitrust policy until the rise to prominence of the so-called Chicago School late in the century. We will certainly see that antitrust policy has indeed often worked to protect existing competitors. Yet as we will also see, many of the early politicians, jurists, and writers who wished to protect small competitors simultaneously blamed the "trusts" for raising prices and thwarting active competition. In this sense, the goal of benefiting consumers, and maybe even of promoting economic efficiency, was also visible in antitrust policy from the very start. The two goals lived side-by-side throughout the century, even if the efficiency view would ultimately gain ascendancy. "Our scared cow was born two-headed," wrote *Fortune* in 1966.[73]

Contrary to the popular account, however, consumer benefit was formally enthroned as the central goal of federal enforcement not by the Chicago School but by the New Deal. In 1938, Franklin Roosevelt appointed a Yale law

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professor, Thurman Arnold, to head the Antitrust Division of the Justice Department. The energetic Arnold would turn the Division into a bureaucratic powerhouse, launching nearly half of all federal antitrust cases brought in the half-century after the passage of the Sherman Act. Arnold's worldview was in most respects the opposite of that of Brandeis. He wished to strip antitrust of its moralistic trappings and focus it squarely on consumer benefit, even if, as it often did, that meant targeting decentralized industries. Far from enumerating prohibited practices, Arnold pursued antitrust enforcement as a process of hands-on case-by-case regulation of business by the state. Along with his own political missteps, the war—during which the military protected the large corporations on which it so depended—brought an end to the Arnold administration. But strong bureaucratic enforcement revived after the war, propelled by attention-grabbing Congressional hearings and a spate of legislation.

As the postwar decades proceeded, economic reasoning began to infiltrate Arnold's rough-and-ready consumer-benefit standard. This came first at the hands of the so-called Structure-Conduct-Performance paradigm, which in some early incarnations had contemplated the possibility of antitrust goals in addition to economic efficiency, including such things as Keynesian full employment, though never anything like virtue-enhancing decentralization à la Brandeis. Yet officials quickly realized that in practice efficiency was the only goal antitrust was actually equipped to pursue. The unwieldy S-C-P paradigm collapsed into a Structuralist view in which, in keeping with the dictates of the static, simplified, and increasingly formal price theory of the day, virtually all that mattered was industrial concentration—the number of firms in an industry.[74] The Structuralists thus shared the economic efficiency goals of the later Chicago School, diverging principally in the details of the model of the economy they employed and the economic judgments they made.

In 1966, Oliver Williamson took on a stint as Special Economic Assistant to Donald F. Turner, the second head of the Antitrust Division under Lyndon Johnson and then a strong proponent of the Structuralist paradigm. Williamson was struck by the Division's inclination to dismiss as anticompetitive, without any careful economic analysis, most kinds of complex contracting between firms. This included the ongoing, and ultimately successful, suit against bicycle maker Schwinn for assigning exclusive territories to its independent distributors, even though it was evident to all that the same conduct would have been perfectly legal had Schwinn been vertically integrated into distribution.[75] Williamson would later brand this attitude "the inhospitality tradition."[76] In the 1960s, he complained, antitrust officials were working with "a black box theory of the firm and a plain vanilla theory of markets."[77]

In an environment of intense postwar antitrust enforcement, this hostility to interfirm arrangements and other complex forms of economic behavior

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worked to reinforce the integrated structure of the large American firm. Among many other examples: as the Depression had once done, postwar anticoncentration policy made it difficult for firms to acquire new technology on the market. This led to a continued emphasis on internal R&D in corporate labs, which in turn generated an incentive to develop proprietary systemic technologies that further reinforced vertical integration and the managerial structure of the firm.[78] By the end of the New Deal, many interfirm arrangements began to be understood as abuses of patent rights, often seen as mechanisms to "leverage" into other products the market power granted by the patents. Through the 1970s, many major antitrust cases were thus settled with compulsory-licensing agreements. As Jonathan Barnett has argued, this created what was in effect a regime of weak intellectual property protection that, coupled with the postwar rush of federal R&D funding into the largest firms, disadvantaged decentralized knowledge creation and reinforced the corporate-research model.[79] Unlike the 1920s and 1930s, the postwar era would not be a period of breakthrough innovation.[80]

The conventional view, of course, is that a strong antitrust regime must have been beneficial because it discouraged combination, collusion, and other anticompetitive behaviors. Needless to say, this claim is difficult to assess, as it rests on unobserved counterfactuals.[81] It is widely heard that the long-running and wasteful suit against IBM in the 1970s is all that deterred the computer giant from commandeering and monopolizing the personal-computer industry. In a similar vein, one hears that the late-century suit against Microsoft is what deterred that firm from commandeering and monopolizing the Internet. We will discover both of these narratives to be urban legends. The most successful antitrust suit of the late twentieth century was arguably the one breaking up AT&T, but that was an act of deregulation in the clothing of antitrust.

We will see a few instances in which the threat of antitrust action did deter firms from acquiring competing or complementary businesses, though the efficiency implications are not always obvious. On the other side of the ledger, however, we will also see instances in which antitrust prosecution or its threat led to clearly perverse consequences. Firms like United Shoe Machinery and IBM *raised* their prices after antitrust action, in the hopes of attracting enough higher-cost fringe competitors to mollify the courts.[82] (This didn't work in either case.) Indeed, propitiating the antitrust authorities by failing to compete aggressively was a strategy that had long since been pioneered by the early-century U.S. Steel.[83]

Perhaps the most damaging, and the least noticed, effects of intense antitrust enforcement were the incentives it sometimes created to distort organizational design in ways that diminished organizational learning and slowed technological change. This was especially significant when antitrust

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enforcement threatened to break up existing large firms. As courts learned early in the century in cases involving American Tobacco, Du Pont, and Standard Oil, it was relatively easy to break up a firm that is already modularized into relatively self-contained units encapsulated as holding companies. Indeed, because these corporations had been trying rapidly to shed the holding-company form in favor of the safer integrated form, courts seeking a breakup sometimes first had to create (or recreate) the necessary holding companies. The later M-form represented a new way of modularizing the corporation. By setting up relatively self-contained wholly owned divisions oriented toward specific product markets, the M-form once again offered antitrust authorities a set of clean break points for dismemberment. Recognizing the dangers, some large corporations—notably including General Motors and the other large carmakers—scrambled their M-form structures as a defensive stratagem. (When firms were too tightly integrated to be easily partitioned, postwar antitrust policy typically had to resort instead to mandating compulsory licensing and other technology-sharing arrangements.)

The rise of industry-wide unionization had similar distortive effects on organizational choices. Before the Depression, many of America's leading industries had been organized as loose geographical clusters in which assemblers depended on, and worked closely with, relatively nearby suppliers. As many authors have suggested, this created an industrial ecology of learning and innovation. For example, the automobile industry invented the just-in-time inventory system, then called hand-to-mouth buying, which depended on the reliability of suppliers. The Depression directly wreaked havoc on this system, and the rise of industry-wide unionism in response to the Depression generated a radical organizational response. As suppliers became increasingly vulnerable to work stoppages, manufacturers integrated vertically to bring labor relations more firmly under their own control, at the same time deskilling suppliers and putting in place a much-less-collaborative relationship with them. Firms also rapidly scattered production to less-unionized regions and away from their original geographical learning bases, concentrating research and development in often-isolated central laboratories.

The postwar organizational structures of the large integrated American corporations left those firms ill equipped to respond to the tumult that was about to engulf them. The hobbling of the country's foreign competitors in the war had endowed American firms with a decided, if arguably artificial, comparative advantage in mass production, one that continued to generate rents for the manufacturing sector through the 1960s. This created a weak selection environment in which ineffective structures and practices, including those driven by antitrust policy and industry-wide unionism, could endure unchallenged. It was also—not coincidentally—during this period that the power of

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managers reached its apex. Ownership became increasingly dispersed as founders retired and died off, and the intense regulation of the financial sector made it difficult for blockholders to reassert control. The immediate postwar decades were indeed the heyday of the Chandlerian corporation.

To put in perspective what came next, we need to interrogate a third great twentieth-century student of the corporation, Joseph Schumpeter. Although he would contribute his own rather transgressive paean to managerialism, Schumpeter also set out a distinctive vision of economic change and the meaning of competition, as well as a profound critique of the goals and practice of antitrust.

As taught in all microeconomics textbooks, antitrust seeks to root out a static misallocation of resources. When prices are raised above costs, gains from trade are left lying on the table, illustrated in blackboard diagrams as triangles of what economists picturesquely call deadweight loss. Yet Arnold Harberger, whose name has become attached to the idea of such triangles, calculated in 1954 that even starting with unreasonably high assumptions about the level of market power in the economy, the potential gains to eliminating all deadweight-loss triangles would amount to something like one-tenth of one percent of GDP, an order of magnitude less than a bad year's worth of annual growth in GDP.[84] This suggests that, as McCloskey put it, the Great Enrichment of market societies in modern times "consists not of little efficiencies but of utterly novel betterments."[85] Writing in precisely this vein, Schumpeter ridiculed the economist's focus on static price competition and the search for little efficiencies.

> In capitalist reality as distinguished from its textbook picture, it is not that kind of competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance)—competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. This kind of competition is as much more effective than the other as a bombardment is in comparison with forcing a door, and so much more important that it becomes a matter of comparative indifference whether competition in the ordinary sense functions more or less promptly; the powerful lever that in the long run expands output and brings down prices is in any case made of other stuff.[86]

Competition, said Schumpeter—borrowing another phrase from Werner Sombart—is a "perennial gale of creative destruction."[87]

Beginning in the 1970s, American industry would come to experience those hurricane winds, from all four points of the compass. Financial liberalization,

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foreign competition, industrial deregulation, and innovative new technologies would bring forth improvements in efficiency and material well-being far beyond anything that conventional antitrust might have imagined.

In the 1960s, the managers of large firms found themselves in control not only of their own retained earnings but also of the equity of numerous powerless shareholders. Because intense antitrust scrutiny made it impossible for them to diversify, as Chandlerian firms had done early in the century, into related areas that took advantage of existing capabilities, firms in this era directed their free cash flow into the acquisition of wholly unrelated businesses, creating the conglomerate form of organization. This development was made easier by the widespread adoption of the M-form, which had encapsulated units into modules that could be easily swapped among corporations. In effect, the conglomerates operated as internal capital markets in a world in which external financial markets remained weak and highly regulated.

But the 1970s would see a transfer of power from internal to external capital markets. Already by 1971, the inflation that was helping to fund the Vietnam War had begun to demolish the postwar Bretton Woods system of regimented international finance, and by the end of the decade, the rise of the Organization of the Petroleum Exporting Countries (OPEC) would radically alter relative prices. In this new, more open—and more dangerous—environment, the distortions of the New Deal apparatus of financial regulation and repression, already visible during the postwar years, were becoming palpable. As institutional entrepreneurs discovered workarounds, the regulatory system began to collapse. In the 1980s, external capital markets reasserted themselves and gained comparative advantage. And the market for corporate control, often in the form of leveraged buyouts, began to disassemble the conglomerate. By then an altered antitrust environment would permit the corporate pieces to be reassembled in ways that took greater advantage of specialization and relatedness among capabilities.

It was also in the 1970s that America's ruined wartime adversaries began to regain their competitive footing. Japanese firms started offering American consumers inexpensive and increasingly high-quality products. Before long, key US industries like steel and automobiles were coming to understand what Schumpeter meant by creative destruction. The once-dominant American consumer-electronics industry was effectively destroyed. US firms clamored for—and received—protectionist trade policies, but these provided only the flimsiest protection from the gale, sometimes producing unintended consequences that actually benefitted the importers. Significantly, as many authors have noticed, the Japanese firms were successful in this era in large part because they emulated the systems of organizational learning and supplier relations that had characterized American industry before the Depression.

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As in banking and finance, the New Deal regime of industrial regulation became increasingly misaligned with technological possibilities and relative scarcities over the postwar period. This opened up profit opportunities in the realm of institutional change. Figures like William McGowan (MCI), Malcom McLean (Sea-Land), and Fred Smith (FedEx) succeeded in part by devoting some of their financial and entrepreneurial resources toward easing or eliminating the legal constraints to innovation they faced. At the same time, incentives appeared for political entrepreneurs to supply the necessary deregulation. Although ideological change was certainly important in the process of deregulation—perhaps most significant, as we will see, in the arena of antitrust—almost all the de jure deregulation of industry had already taken place before any meaningful ideological change would find its way to Washington.

In the end, the strongest meteorological forces of the post-1973 era would be those released by new technology. The invention of the planar process in the late 1950s gave the world Moore's Law: the realized prediction that the number of transistors on a silicon chip would continue to double every eighteen months.[88] What turned out to be a mind-bending 35 percent annual rate of growth in chip density would lower the relative price of electronic equipment persistently and dramatically. The general-purpose technology of the microchip would extend into virtually all spheres of enterprise and would alter the economic geography of production and consumption in ways every bit as radical as the railroad and the telegraph had in the nineteenth century. As the power of the personal computer successively overtook that of the mainframe computer, the minicomputer, and the workstation, the computer industry would experience a "competitive crash" of industrial restructuring.[89]

The book's epilogue will take this story into the present. With continued miniaturization, the smartphone would edge the personal computer into eclipse; and, with the complementary development of high-speed networking technology, the smartphone and cloud computing would become the two great general-purpose technologies of the modern era. These would give rise to the Big Five firms (and their brethren) that now dominate public and academic discourse about the corporation.

Having undertaken a detailed and nuanced history of the corporation in the twentieth century, we will find ourselves in a better position to visualize, interpret, and assess the panorama of the corporation in the twenty-first century.

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