ORGANIZATIONS IN INDUSTRY

Strategy, Structure, and Selection

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Railroads

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In the United States, local, state, and federal governments played central roles in the evolution of the railway industry. Although the industry evolved incrementally in terms of track mileage, passenger and freight traffic, and capitalization, it changed dramatically at several points in terms of strategy, selection, and structure in the wake of major shifts in public policy. As a result, analysts have organized railway history into several, discrete periods marked by changes in public policy that brought about sea changes in the industry. Of course, public policies were responsive to the industry's economic peculiarities, such as capital intensity and asset specificity, and the problems and evils that policymakers perceived in those peculiarities.

This chapter focuses on business strategy, industry structure, and selection mechanisms between 1825 and 1990. The main environmental changes during this period were generated by the interaction between the industry's economic characteristics and public policy. Whereas the organizational environment is conceived as the market in most of the chapters in this book, in this chapter it is conceived as government regulation and public policy. In such heavily regulated industries as the railroads, the state is a particularly salient part of the environment. For instance, in some periods American policy made the rail industry exceptionally cooperative and in others it produced cutthroat competition. Public policy generated very different kinds of environments over time—different kinds of markets, in effect.

This chapter underscores the special role of public policy in the rail industry, but it also points to the broader importance of public policy in creating the organizational environment. Whereas some of the policies that governed the rail industry were unique, a number now govern most U.S. industries. Antitrust law is a prime example. Organization theorists typically set aside public policy in examining the environment, on the principle that today most industries operate in similar public policy environments. This chapter highlights the

importance of today's public policy regime by contrasting it with previous regimes. It also provides clues to the early evolution of other industries, such as banking, canals, and insurance, that were influenced, like railroads, by policy regimes favoring public capitalization and private cartels.

Several of the industry's economic characteristics proved important in the evolution of the policy environment and the industry. First, railroads produce large *secondary economic returns*—in terms of the promotion of commerce, agriculture, and manufacturing—relative to their *primary returns*, i.e., corporate profits. These large secondary returns produced atypical motives among railroad promoters. Second, a high *fixed cost–variable cost ratio* encouraged railroads to maximize business by slashing prices to just above operating costs. This had important implications for selection in the industry. Third, almost all railroads held *service monopolies* between certain points and competed with other roads between other points, which encouraged them to charge high rates where they faced no rivals and low rates on competitive routes to maximize business. Fourth, the industry was characterized by *small numbers of competitors* on each route, which encouraged railroads to try to control competition through cartels, pools, joint stockholding, leasing of competitors, predatory pricing to bankrupt competitors, acquisitions, and mergers. Finally, *asset specificity*, or the impossibility of transferring capital invested in railroads to other uses, meant that railroads would often continue to operate even when they were losing money. These peculiar economic characteristics interacted with public policy to shape the industry's environment.

Between 1825 and 1990, U.S. railroads were governed by five different policy regimes. In each period public policies determined how strategy, structure, and selection would operate (see Table 4-1). In the first period, between 1830 and 1869, public capitalization led to thousands of railroad foundings across the United States. The industry was divided between intercity trunk lines and small independent spur railroads, and the two groups were highly mutualistic. Small lines financed in anticipation of demand by eager governments often failed. Next, between 1870 and 1889, state governments controlled rates to prevent inequities, with the effect of stimulating competition and later spawning cartels. Competition led to the failure and acquisition of many railroads, and created marked resource partitioning because specialist lines with noncompetitive routes had much greater chances for survival than did generalist lines with competitive routes.

In the third period, between 1890 and 1919, anticartel and antitrust legislation undermined price-fixing and caused railroads to engage in predatory pricing. One result was unprecedented numbers of failures and acquisitions. Fourth, between 1920 and 1965, Congress tried to both sustain price competition and prevent the abandonment of service on unprofitable routes. Many railroads could not offer competitive prices when they were forced to serve unprofitable locations, and these railroads often failed—to be acquired by their competitors. Everywhere, holding companies and rate associations produced surreptitious cartels to dampen rate competition and stabilize existing firms. Finally, after 1966, Congress nationalized certain portions of the industry, and deregulated

Table 4–1 Strategy, structure, and selection in the railroad industry

Period	Principal policies	Strategy	Structure	Selection
Period 1 1830–1869	Public capitalization	Foundings financed for secondary returns Uncompetitive	Intercity trunk RRs and small spur RRs	Lines capitalized to create demand fail Mutualism
Period 2 1870–1889	Rate regulation Weakly pro-cartel	Cutthroat competition then cartels	Regional networks compiled from failed RRs	Competitive lines fail Resource partitioning
Period 3 1890–1919	Anticartel and antitrust	Rate discrimination and mergers	Mergers create huge railroads	Independent lines fail; some merge; others are acquired
Period 4 1920–1965	Anticartel and antimerger Rate and abandonment regulation	Holding companies and rate associations	Large surreptitious cartels	RRs cannot cut losing routes and fail Many acquisitions, few mergers
Period 5 1966–1993	Partial nationalization Deregulation of mergers, abandonments, rates	Active competition among independents	State-run sector and consolidated private RRs	Most lines merge or are acquired

prices, abandonments, and mergers. The result was a flurry of acquisitions and the abandonment of large segments of little-used track.

What caused these policy changes? Most analysts link U.S. rail policies to the nation's longstanding suspicion of the concentration of economic power in the state or in private hands. For instance, states amended their constitutions to outlaw the public capitalization schemes that were popular before 1870 because the schemes gave public officials excessive power that resulted in corruption. Later, Congress outlawed the price-fixing practices that were popular in the 1870s and 1880s because price-fixing gave private railways excessive power that resulted in unfair rates.

The origins of American rail policy are the subject of a voluminous literature that we cannot do justice to here, but this much is clear: policy changes were not direct responses to the economic evolution of the industry, for other countries that faced substantially similar economic issues adopted entirely different policies. While the United States was outlawing cartels, Britain was making them legal. While the United States was preventing mergers, France was merging private firms into a single national monopoly.

PUBLIC CAPITALIZATION, 1830–1869

British engineers had experimented for a decade with different steam locomotive designs before George Stephenson introduced his "Rocket" in 1829, the first truly practicable engine. The success of the Rocket gave impetus to the railway industry in Britain and the United States alike. In the United States, state and local governments offered generous financial inducements to private rail promoters, in the form of bond guarantees, stock subscriptions, and land grants. Governments helped to capitalize private railroads because they were eager to reap the secondary economic benefits that railroads were expected to bring—growth in agricultural exports, in demand for manufactured goods, and in commercial activity of all sorts.

Merchants, manufacturers, and farmers lobbied in town meetings and state houses for public aid to railways, and one result was that railways were often built in the hope that they would create their own demand. For instance, the promoters of the New York and Oswego Midland proposed to build a major line through the state of New York. They collected promises of capital in the amount of $5.7 million from fifty towns scattered across the state, and built a zigzagging line that connected these towns, but that did not serve a single major city. The N.Y.&O.M. never did generate sufficient demand, but many small railroads, such as the Salem and Lowell in Massachusetts that opened in 1850 to connect the mill town of Lowell with the port at Salem, generated more than adequate demand.

Between 1830 and 1870, state and local governments invested huge sums in railway construction. In the 1830s and 1840s, state governments provided fully 40 percent of the capital used to build railroads, and estimates put public capitalization before the Civil War at somewhere between one fourth and one half

of the cost of building railroads. In these years, state governments practiced "rivalistic state mercantilism" (Scheiber 1981, p. 131) with the aim of winning the lion's share of the nation's transport and commerce. They made large public investments in canals, turnpikes, banks, and manufacturing establishments as well.

Early experiments with public funding of railroads generated untold corruption that garnered support for the doctrine of laissez faire, but in the early years governments had no compunctions about investing in private enterprises. On the contrary, governments acted as public entrepreneurs: "The elected official replaced the individual enterpriser as the key figure in the release of capitalist energy; the public treasury, rather than private saving, became the major source of venture capital; and community purpose outweighed personal ambition in the selection of large goals for local economies" (Lively 1955, p. 81). In those years, "No ambitious town could stand idly by and see a new railroad go to a rival place. There was no option but to vote bonds" (Ripley 1912, p. 38).

Public Capitalization and Foundings

As a result of the general enthusiasm for railroads created by Stephenson's new locomotive, combined with activism among state and local governments, foundings took off in the 1830s and 1840s. National railway statistics were not gathered until the Interstate Commerce Commission was established in 1887; thus we must rely on the comprehensive data collected for Massachusetts during this period, which is representative of the national trend. Fortuitously, the rail industry was highly localized in this early period and thus the state was the effective boundary of the population. By the time the population boundary was expanded by the construction of interstate lines and by the technical integration of different railroads, national data were collected. Thus we turn to U.S. data in the last three periods.

The number of charters granted by the Commonwealth rose from three in the 1820s to thirty-four in the 1830s to a peak of seventy-eight in the 1840s. This activity was stimulated, in part, by Britain's contemporaneous "railway mania" and in particular by the availability of capital in London money markets, which stimulated American state and local governments to issue bonds in British sterling and offer them to London investors. The American railway mania was a classic case of a process Michael Hannan theorized in 1986, in which early foundings and technological innovations create legitimacy for a new type of organization and attract substantial resources for foundings.

In this early period, both public and private investors put money into railroads based not on rational calculations of *primary* returns—the potential profitability of the enterprises—but on calculations of *secondary* returns. Then between 1862 and 1871, Congress passed land grant bills in aid of four transcontinental railroads in the hope of producing secondary benefits. The land grants were expected to open up trade to the West and stimulate growth. Federal and earlier state land grants provided rights-of-way and huge checkerboard tracts of land—ten to forty miles wide—alongside the routes. Federal grants were designed to spur rail construction while evading constitutional restrictions

on federal investment in private enterprises. The whole purpose of the land grants was to enable railroads to recoup construction costs by selling off the land. Like state and local capitalization schemes, federal land grants were designed to speed the construction of railroads that would create demand, rather than to fulfil existing demand. In all, federal and state governments gave over 140 million acres to railroads (Haney 1908, p. 6).

The land grant legislation produced only a handful of foundings, but the transcontinental lines generated scores of new branch lines on the basis of the industry's natural mutualism. As William Barnett and colleagues have argued, in mutualistic industries, such as the telephone and rail industries, the existence of large firms that serve huge networks has a positive effect on the survival chances of small firms, for they enable smaller firms to make connections with the large networks (Barnett and Carroll 1987; Barnett and Amburgey 1990). Thus in the rail industry, once a trunk line was built, entrepreneurs could connect a minor city with the rest of the world simply by building a connecting spur line. For instance, after the east-west Boston and Worcester Railroad connected Worcester with rail and sea routes in Boston, a spur line from Worcester northward to Fitchburg was built to give the latter town access to the entire network.

Public Capitalization and Failures

Failures were quite common among early American railroads, in part because railroads were capitalized by governments in anticipation of demand. In Britain, transport demand was great on many routes by 1830 and governments provided no capital to railroads; hence most railroads were built to compete for the traffic that canals and turnpikes were serving. By contrast, even in the relatively settled state of Massachusetts, many railroads were built to generate demand, and many failed to do so. As early as the 1840s, Massachusetts saw forty-nine railroad failures. Many railroads failed after winning charters—which they needed to expropriate private lands—but before opening for business, because they never collected sufficient capital. Many others failed after completing construction when their receipts proved inadequate to meet their operating expenses. This evidence reinforces the finding of David Tucker and colleagues (1988) that government subsidies may increase both foundings and failures in an industry. Government capitalization may increase foundings by increasing the pool of available resources, but it may lead to an increase in subsequent failures by artificially inflating foundings.

In sum, due to the availability of public financial backing during this first period, railroad founding *strategy* was based less on the expected profitability of a railroad than on the secondary economic benefits the railroad was expected to return to a community. Investors, particularly governments, paid little heed to whether their investments would turn a profit—they were concerned exclusively with the benefits that would accrue to their regions. In this period, railroads gained tremendous legitimacy from the early successes of British locomotives and from the British railway mania. The effects of public capitalization are visible in Figure 4-1, which shows large numbers of total foundings in the 1830s and 1840s when demand was still very low.

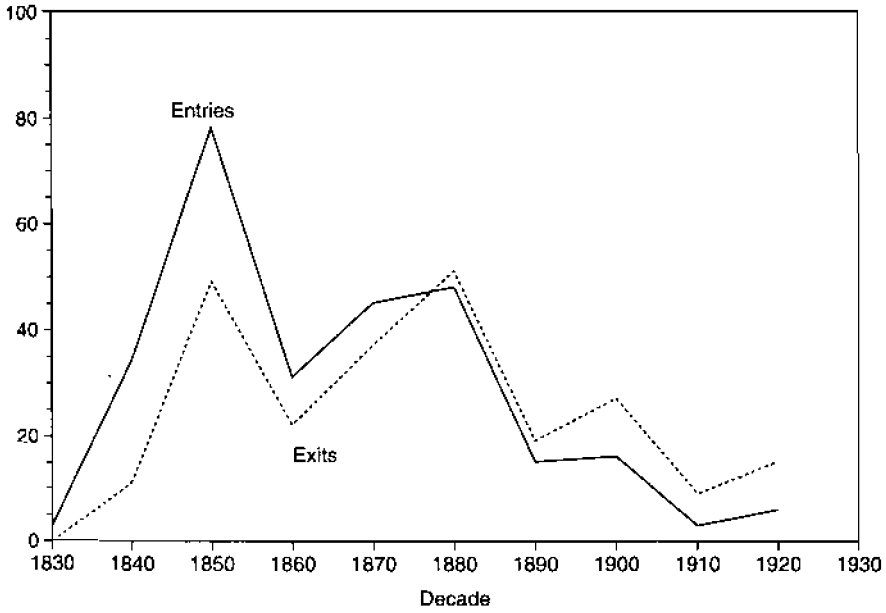

Figure 4–1 Decennial totals of entries and exits of railroads in Massachusetts. (*Source:* Author's analysis of data from Massachusetts Railroad Commissioners.)

Industry *structure* was characterized by a proliferation of small branch lines and a small number of longer lines that served major cities. In Massachusetts, by 1870 a handful of trunk lines such as the Boston and Lowell, the Boston and Maine, the Boston and Providence, and the Boston and Worcester, had spawned over forty operating secondary lines to provide connecting service to smaller towns, such as Framingham, Harvard, Pittsfield, and Stoughton. In between these lines were lines such as the Fall River and the Salem and Lowell, which primarily gave medium-sized cities access to ports.

At the beginning of the period there was virtually no competition among railroads, because most held service monopolies, and hence there was little reason for railroads to combine or try to fix prices. As a result, railroads had unitary structures, in that they owned single stretches of track without tributaries, for most of the period. By 1870, none of Massachusetts' trunk lines had acquired secondary lines. Mergers were rare, and railroads seldom sought to expand—railroaders established new firms rather than increasing the size of the railroads they already controlled. Thus Figure 4-2 shows that as late as 1870, the average Massachusetts railroad operated less than forty miles of track.

Selection was little influenced by competition before 1870. Most railroads, large and small alike, held exclusive routes and faced no competitors. Failure much more often resulted from public investment in ill-conceived lines, which produced large numbers of precompletion failures among publicly capitalized railroads. Moreover, while many operating firms found that they could not

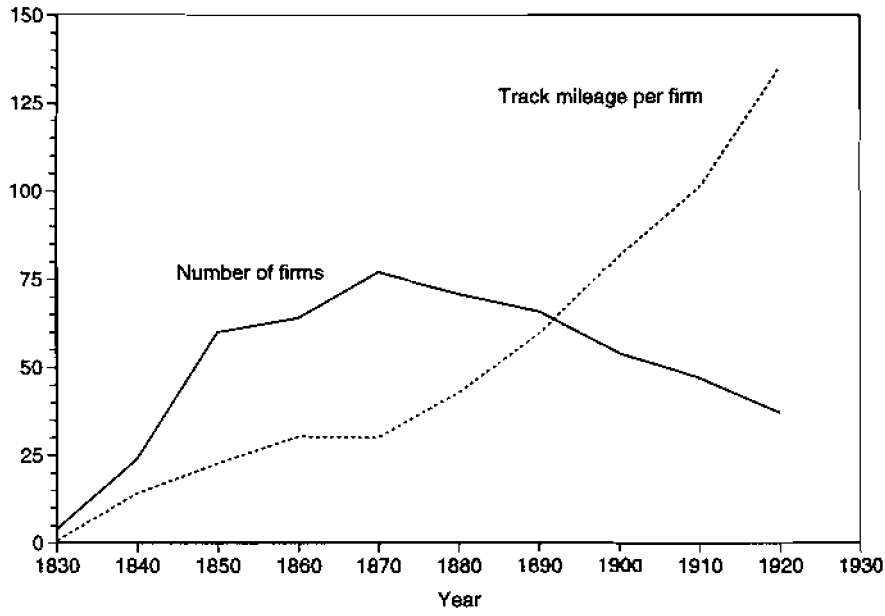

Figure 4–2 Massachusetts railroad population. (*Source*: Author's analysis of data from Massachusetts Railroad Commissioners.)

meet their capital obligations, relatively few of those firms closed down because asset specificity removed the incentive to liquidate. Figure 4-1 shows an especially high number of failures in the decade ending in 1850.

The period of public capitalization came to an end in the early 1870s as a result of widespread corruption and graft in the administration of public aid. Many governments had been defrauded by railway promoters who used creative accounting dodges to transfer public monies to themselves. As a result, governments found themselves responsible for paying off large public debts. Over a dozen state governments and scores of cities and towns defaulted on their commitments to railway investors. In response, most state and local governments swore off providing future aid to railroads. By 1870, fourteen states had actually passed constitutional amendments prohibiting public investments in private enterprises. Then in 1871, when it came to light that railwaymen had bribed eighteen senators and congressmen to vote for generous aid to the first transcontinental railroad, Congress foreswore further land grant aid.

RATE REGULATION, 1870–1889

The environment changed dramatically at the beginning of the 1870s as a result of one functional change in the operation of the industry and one broad shift in policy. The functional change followed successful efforts to establish physical

connections between railroads, to set uniform operating procedures, and to standardize rail gauge and other technologies. In short order, the rail network became integrated so that trains could continue from the track owned by one company to the track owned by another, facilitating through traffic and making it possible to string short railroads together for long-distance service. Competition was enlivened, which brought efforts by railroads to escape competitive pricing through rate discrimination—irregular rate structures that were deemed unfair. The policy shift occurred when state governments responded by regulating rates to address perceived inequities. Regulation produced unforeseen price competition, which led to an unprecedented series of mergers and acquisitions and also a move toward cartelization that briefly altered the nature of selection pressures.

This period also saw the emergence of what Glenn Carroll (1985) has called "resource partitioning" (see Section IV of this book). The trunk lines, which acted as generalist organizations and typically competed with other trunk lines, engaged in active price competition that led to failures and increased concentration. By contrast, small, specialist, spur lines that connected minor cities with trunk lines typically faced no competition from generalists. In effect, rich niches appeared for specialist lines, niches that were safe from predatory price competition.

Antidiscrimination Law

Most railroads hold service monopolies to some destinations along their routes and face competition on others. The typical railroad connects two terminal cities that are served by other roads, such as Indianapolis and Cincinnati, and has depots in a number of small towns that are not, such as Oxford, Ohio. This railroad was forced to charge competitive prices for Indianapolis-Cincinnati service, but could charge whatever the traffic would bear between Oxford and Cincinnati. The industry's high fixed costs encouraged railroads to set rates just above variable costs on competitive routes, and the result was dualistic rate structures. Railroads offered lower prices for long-distance competitive service (e.g., Indianapolis-Cincinnati) than for short-distance, uncompetitive service *over the same track* (e.g., Oxford-Cincinnati). This practice became known as local rate discrimination and it was much vilified by the National Grange of the Patrons of Husbandry (est. 1867), a group comprised of farmers and ranchers who transported produce and livestock from isolated rural communities to urban markets. State governments established regulatory commissions to prevent local rate discrimination against isolated towns, and personal rate discrimination against particular customers. All six New England states had established such commissions by 1870, and by 1887 twenty-five states had installed commissions.

Many state commissions failed to end rate discrimination, but commissions in key states with substantial rail traffic, such as Massachusetts and Illinois, did succeed. The new short haul–long haul regulations prevented railroads from charging higher rates for short-distance transport than they charged for long-distance transport on the same route. These regulations undermined the dual-

istic pricing strategy by forcing railroads that charged cutthroat rates on their competitive routes to charge equal or lower rates on shorter noncompetitive routes. Between 1869 and 1875, aggressive price competition in conjunction with these antidiscrimination rules caused unprecedented failure rates, particularly in the East. In Massachusetts there were forty-one failures between 1870 and 1875. These changes stimulated railroads to look for ways to control competition in the industry.

Rate Regulation, Bankruptcy Law, and Selection

Rate regulation, in the form of antidiscrimination legislation, undermined the prevailing pricing strategy that railroads depended on to sustain profitability, that of charging high rates on noncompetitive routes to offset low rates on competitive routes. This posed a particular problem because railroads faced significant asset specificity, which made it impossible for rail operators to shut down and reinvest their capital elsewhere. Railroads' investments in rights-of-way, buildings, and track were extremely high, and these resources could not be converted to other uses. As a result, railroads that faced financial failure due to their inability to meet capital obligations did not encounter the same kinds of selection pressures found in other industries.

First, the nontransferability of railroad assets meant that railroads would often continue to operate despite the fact that they lost money. Investors in troubled railways had little to gain by demanding the liquidation of assets and distribution of receipts to shareholders. Early bankruptcy laws that allowed companies to continue to operate in receivership were a prime cause here—if bankruptcy laws had been such that financial failure led to abandonment of service, lines that lost money would have exited the industry.

Second, asset specificity meant that railroads that *did* go bankrupt were often purchased by new investors for a fraction of their original capital cost. Financial failure sometimes meant death for a particular operating company, but it seldom meant permanent abandonment of service. New owners, relieved of debt service, could often operate a railroad profitably. This practice remained common in subsequent periods. Between 1900 and 1920, for instance, every charter granted in Massachusetts went to a new company that had assumed the operation of a failed line.

These two practices—operating at a loss and operating with capital obligations wiped out—led to a two-tiered rail system. The first tier was comprised of railroads with massive original capital obligations that they actively tried to pay off, and the second tier was comprised of railroads that had either given up hope of amortizing debt or had been relieved of capital obligations through bankruptcy. Now lines with heavy capital obligations competed with railroads that sought to cover operating expenses alone, which led to a spate of financial failures among otherwise healthy railroads. Paradoxically, railroads that had been financially mismanaged early on, and had undergone bankruptcy, were in a better position to compete than lines that had been well managed and had remained solvent.

Price competition heated up after the Civil War, in part because new railway construction increased the number of competitive routes. Figure 4-3 shows that

track mileage increased by nearly 50 percent during the 1860s, and then nearly doubled in the 1870s. In Massachusetts, railway failures exceeded foundings for the first time in the decade that ended in 1880 (see Figure 4-1).

Cartel Policy and Business Strategy

With dualistic rate structures outlawed, and with failures abounding, state and federal governments encouraged the creation of rail cartels and pools. Cartels fixed transport prices and pools fixed prices and apportioned traffic or profits among different railroads. In 1866, Congress passed legislation that would allow railroads to share rolling stock and track to facilitate traffic pooling and collaboration. In 1875, the Massachusetts Board of Railroad Commissioners argued that, "An open and reasonable [cartel] would probably be found far less fruitful in abuses than a secret and irresponsible one. One or the other must exist under the circumstances of the case" (p. 41). In 1878, the board held that, "Uncontrolled competition is but one phase in railroad development and must result in some form of regulated combination"—in other words, collaborative price setting was inevitable (Massachusetts Board of Railroad Commissioners 1878, p. 80).

Railroad freight agents met regularly, and in full view of the public, to set rates on competitive routes. Under long haul–short haul legislation, railroads could charge high rates for short routes so long as they charged high rates for longer routes as well; thus by buoying prices on competitive routes these rate associations solved the problem posed by the legislation. During the 1870s,

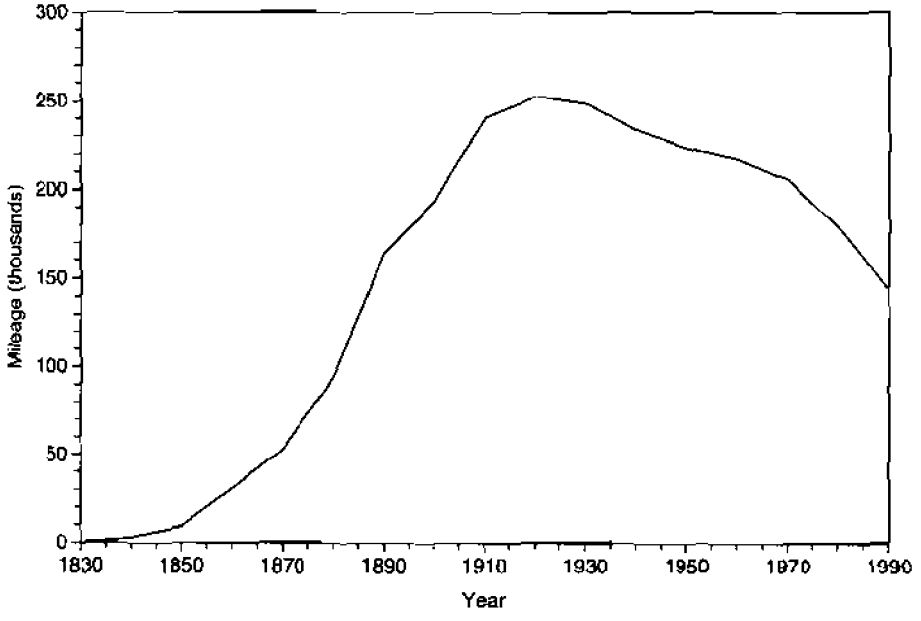

Figure 4–3 Railway mileage in the United States. (*Source*: Adapted from Locklin 1954, U.S. Bureau of the Census 1975, and U.S. Treasury Department 1992.)

Albert Fink, who had started his career as an engineer for the Baltimore and Ohio and had become a manager of the Louisville and Nashville Railroad, established the Eastern Trunk Line Association to set rates and allocate traffic for East-West interstate railroads. The idea was to stabilize the industry and prevent rate wars by making pricing and service agreements that would be beneficial to all members. During the reign of the cartel, between the mid-1870s and the mid-1880s, competitive pressures on railroads abated. Massachusetts recorded only ten failures between 1876 and 1880, down from forty-one in the first half of the decade (Dobbin and Dowd 1992).

However, these pools did not last, because while state and federal legislatures generally favored them in the 1870s, the courts would not enforce pooling contracts, which they deemed to conflict with common-law doctrine against "restraints of trade." Voluntary participation in pools was perfectly legal before the passage of the Sherman Act and establishment of the Interstate Commerce Commission at the end of the 1880s, but the courts would not hold railroads to agreements they wished to break, and would not compel participation in pools. Thus by 1884 the Eastern Trunk Line agreement lay in shambles. Subsequent efforts to create stable regional cartels during the 1880s almost invariably fell apart when one railroad broke ranks. In Britain, by contrast, pooling and cartels emerged in a wide range of industries in the last three decades of the nineteenth century. Parliament took a benign view of pools, and agreed to enforce voluntary pooling agreements. Consequently, British pools worked where American pools failed.

Regulation, Cartel Policy, and System Building

In the 1870s and 1880s, when state-level rate regulation stripped railways of the capacity to sustain income by charging exorbitant rates on monopoly routes, and when federal case law prevented them from making dependable price-fixing agreements, many railroads suffered severe financial losses and were acquired by large networks. New York investors put together huge railway systems through mergers, leasing arrangements, and joint stockholding agreements. *System building* became a popular business strategy.

In the late 1860s, Jay Gould, the "Mephistopheles of Wall Street," sought to put together an interregional rail system that would give the Erie control over a number of lines in the Midwest, and his efforts stimulated the Pennsylvania to take preemptive action to control roads serving Chicago, Indianapolis, St. Louis, Cleveland, Toledo, Michigan's peninsula, Erie, Pittsburgh, and other major midwestern cities by 1876. By 1880, Gould was buying stock in a number of lines, including the Wabash, the Lackawanna, the Central of New Jersey, and the Boston, New York, and Erie, to put together a huge transcontinental network.

The earliest network-building strategy had been to make local acquisitions to dominate rail transport in one area, thereby creating regional networks of competing lines that were owned by a single company. Gould revolutionized network building by acquiring interregional railroads that could allow him to provide long-distance through-service between regions. In the railway industry this sort of end-to-end consolidation of railroads amounted to vertical integra-

tion, because inputs were the goods transferred *from* connecting lines and outputs were the goods transferred *to* connecting lines. Gould reasoned that with exclusive service on particular midwestern and western routes, he would have a virtual monopoly on all western traffic that originated, or terminated, in the East.

Soon other network builders followed the same strategy, and the result was a rise in huge, integrated, railway systems during the 1880s. By the early 1890s, the Pennsylvania had nearly 8,000 miles of track, the New York Central had over 6,000 miles, and nine other railroads had between 5,000 and 10,000 miles of track. Figure 4-4 shows this change. In 1870 there was only one U.S. railroad operating over 1,000 miles of track, and by 1890 there were forty such railroads. Integration was achieved through formal mergers, but also through trusts, holding companies, joint stockholding agreements, and leasing arrangements.

In sum, government regulation of railway rates altered the nature of the industry markedly in this second period. The industry's high fixed costs, asset specificity, and small numbers of competitors made truly competitive pricing difficult to sustain. The early *strategy* that railroads adopted, of dualistic rate structures that took advantage of exclusive routes while drawing business on competitive routes, was undermined in the early 1870s by state-level rate regulation. One popular new strategy was price fixing. However when the courts refused to enforce price-fixing agreements, railroads turned to the strategy of system building to evade rate wars and monopolize long-distance service.

Industry *structure* changed noticeably over these years. Many small railroads failed and were bought up by trunk lines. In 1870, the Boston and Maine

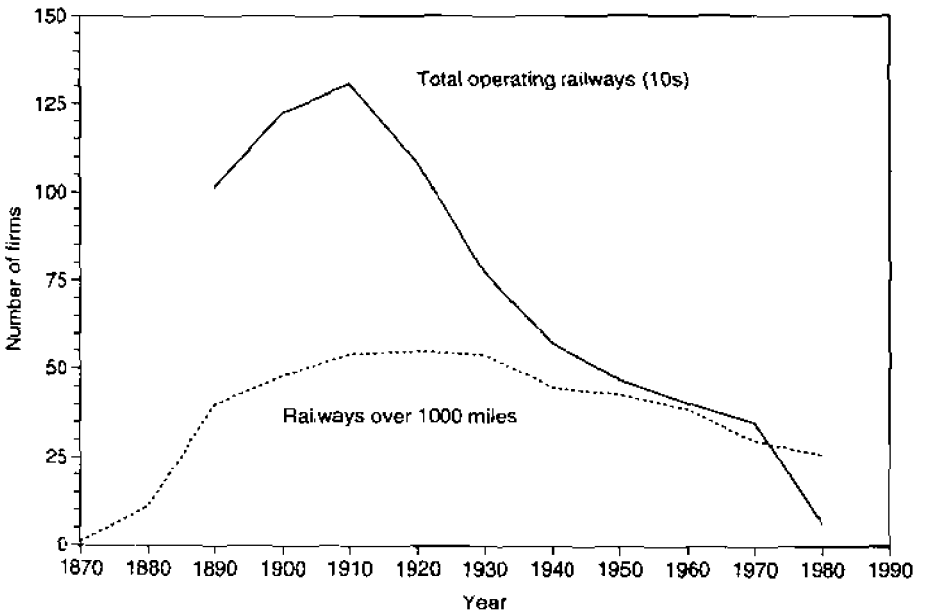

Figure 4–4 Operating railways in the United States. (*Source:* Adapted from Kennedy 1991, and Moody's Investor Service 1992.)

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In sum, government regulation of railway rates altered the nature of the industry markedly in this second period. The industry's high fixed costs, asset specificity, and small numbers of competitors made truly competitive pricing difficult to sustain. The early *strategy* that railroads adopted, of dualistic rate structures that took advantage of exclusive routes while drawing business on competitive routes, was undermined in the early 1870s by state-level rate regulation. One popular new strategy was price fixing. However when the courts refused to enforce price-fixing agreements, railroads turned to the strategy of system building to evade rate wars and monopolize long-distance service.

Industry *structure* changed noticeably over these years. Many small railroads failed and were bought up by trunk lines. In 1870, the Boston and Maine

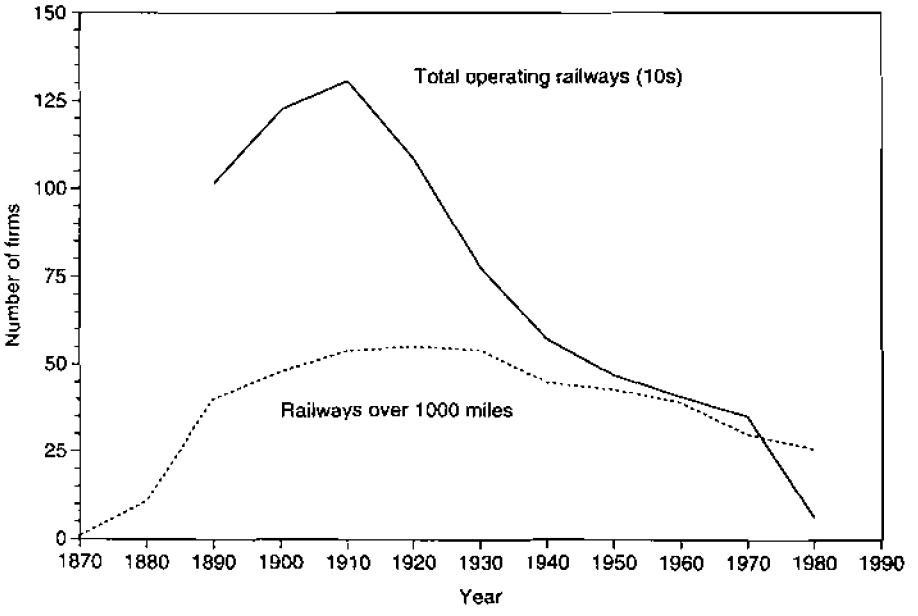

Figure 4–4 Operating railways in the United States. (*Source:* Adapted from Kennedy 1991, and Moody's Investor Service 1992.)

owned but three short branches it had built itself, but by 1890 it had acquired full or partial interest in twenty-one other railroads. In turn, a number of trunk lines were acquired, in part or in full, by Jay Gould and other system builders. Many other railroads did not formally merge, but came under the control of larger regional roads like the Boston and Maine via leases. The industry had consisted of hundreds of small one-line railroads and a few regional trunk lines in 1870 and by 1890 it contained an increasing number of interregional trunk lines that controlled branch lines and parallel lines (those that served the same endpoints). Figure 4-1 shows that between 1870 and 1890 the number of railroads in Massachusetts declined for the first time, and that the average length of railroads nearly doubled.

Industry structure was also changed by the completion of the transcontinental lines built with land grants. From the inauguration of the Union Pacific and Central Pacific lines in 1869, connecting Sacramento with Chicago, rail service west of Chicago was opened and new secondary lines began to be planned and built. In part as a result of the opening of trunk-line service to the West, total rail mileage in the United States increased rapidly between 1870 and 1890 (see Figure 4-3).

Selection varied widely across this brief period. In the first half of the 1870s, rate wars put many small railroads out of business. Figure 4-1 shows especially high numbers of failures in the decade that ended in 1880. Between the mid-1870s and the mid-1880s, there was a bit of a respite due to the success of the pools at preventing rate competition, but by the end of that period most pools had fallen apart and many small railroads sought the protection of larger regional partners.

ANTICARTEL AND ANTITRUST LEGISLATION, 1890–1919

Between 1870 and the end of the 1880s, state and federal law made some popular pricing strategies illegal, such as rate discrimination, and made others, such as pooling, difficult to sustain. But in 1887, federal law changed dramatically, virtually requiring all railroads to engage in active price competition. It would be a decade before the Supreme Court declared the core of the Interstate Commerce Act constitutional, but the subsequent effect on railroads was dramatic.

American concern with the monopolistic powers of railways increased with the rise of huge, integrated railways in the 1880s. As Thomas McCraw concludes:

> In the minds of many members of the generation that came to maturity during the 1880s and 1890s, the huge new companies we now call center firms seemed somehow unnatural . . . the consequences of some evil tampering with the natural order of things. They were not merely economic freaks but also sinister new political forces—powers that had to be opposed in the name of American democracy. (1984, p. 77)

Congress spent much of the 1880s debating legislation to contain these powers. What was needed, according to railway customers ranging from eastern oilmen to midwestern merchants to southern farmers, was a regulatory power at the federal level that would establish ground rules for operation and put an end to various restraints of trade practiced by the railroads, including price fixing and rate discrimination. The Act to Regulate Interstate Commerce made pooling and rate discrimination illegal and established the Interstate Commerce Commission (ICC) to adjudicate complaints.

The Pooling Prohibition, Discrimination, and Mergers

A number of states had outlawed price discrimination in the 1870s, but public policy had generally been neutral toward cartels and pools before 1887. Although pooling contracts were not legally enforceable because they constituted restraints of trade, voluntary participation in pools that fixed prices and apportioned traffic and profits was perfectly legal. Thus before 1887, pool organizers such as Albert Fink lobbied Congress in the hope of making the agreements legally enforceable.

Although the 1887 act outlawed pooling, the ICC's powers were decimated by early Supreme Court decisions and the commissioners found it difficult to enforce the act before 1897. Despite the fact that new federal legislation was weakly enforced at first, it helped to generate selection pressures akin to those that had been in operation between 1869 and 1875, before pooling and price fixing became widespread. There were strong pressures for price competition, which produced an incentive to win business and increase revenues by means other than rate reductions.

Local rate discrimination was one strategy railroads pursued in response to the changed environment. The rate discrimination clause of the 1887 act was weakly worded, and rate inequities were increasingly difficult to detect as the national network became more dense and as routing became more complex. Thus many railroads practiced discrimination without being detected between 1887 and 1910, when federal regulation of discrimination was reinforced by new legislation.

Personal rate discrimination was a second common business strategy. Railroads gave special advantages to particular shippers in order to win their exclusive business. Sometimes they did this surreptitiously by giving rebates, in cash or in kind. In turn, the shipper might be able to corner the local market due to unusually low shipping costs, and the railroad would end up with the business of the monopoly firm in the field. A case in Galveston, Texas, in 1908 exemplifies the problem. Only two storage facilities for cotton seed existed in Galveston, which was a port for international shipping. The Southern Pacific owned one of those facilities, and gave highly preferential storage rates to a single cotton shipper. Hence other cotton seed shippers were driven out of the market because they could not offer competitive prices. The Southern Pacific thereby gained a virtual monopoly in the transport of cotton seed by giving one shipper a clandestine shipping rebate. This strategy came to prevail as a way to win market share and escape cutthroat price competition, though it was by

no means new. Standard Oil had been party to many rebate schemes in the early 1870s, and was eventually prosecuted for its participation.

Mergers were the final strategy that was popularized to circumvent anti-pooling legislation. The paradox of both the Sherman Antitrust Act and the Act to Regulate Interstate Commerce was that by preventing cartelization, they encouraged mergers: "While cartels were illegal, . . . mergers that created monopolies or near monopolies . . . were not illegal, even if they were intended to restrain trade" (Fligstein 1990, p. 35). The economy-wide turn-of-the-century merger movement was spawned in part by the Sherman Act, which outlawed trusts and other restraints of trade and made horizontal integration among competing firms the only dependable strategy for dampening price competition.

Railway mergers, in particular, were also stimulated by the Act to Regulate Interstate Commerce. When the Supreme Court upheld the Interstate Commerce and Sherman acts in the trans-Missouri case in 1897, railway managers came to accept that they would not be able to revert to cartelization and turned, en masse, to mergers to control prices. Mergers skyrocketed, as we see in Figure 4-5. During the mid-1890s, 30 to 40 railroads merged each year, but suddenly in 1897 the number rose to nearly 80 and in 1900 it increased to nearly 130. Between 1897 and 1904, some 700 American railway companies were merged, and by 1910, 54 companies controlled more than two thirds of the nation's railroad mileage (Ripley 1915, pp. 458–60).

ICC Enforcement and the Holding Company Strategy

The Progressive Era produced a series of bills that enhanced the ICC's capacity to undermine rate discrimination. The Hepburn Act (1906) empowered the ICC to prevent personal discrimination and to establish maximum rates, the Mann-Elkins Act (1910) expanded the ICC's authority over local rate discrimination and gave it veto power over proposed rate changes, and the Railroad Valuation Act (1913) improved the ICC's ability to evaluate rates.

Local and personal rate discrimination became much harder to carry out, and railroads initially responded by merging to quell competition. However, the government soon began to enforce the restraint of trade provision of the antitrust law by preventing mergers. In 1909, the government denied the proposed Burlington–Great Northern Pacific merger, which led railroads increasingly to combine by establishing *holding companies* to buy the stock of other railroads. Between 1917 and 1920, the federal government took temporary control over the nation's railroads as part of the war mobilization effort, but in 1920 private ownership was restored and a new set of regulatory mechanisms was put into place.

In sum, organizational *strategy* changed significantly again as a result of policy changes. The Interstate Commerce Act, when it was finally enforced, prohibited both discrimination and pooling and stimulated mergers and the use of holding companies to quell predatory price competition. Figure 4-5 shows a large increase in mergers beginning in 1897, when the Supreme Court upheld the Interstate Commerce Act and the Sherman Antitrust Act as they applied to railroads.

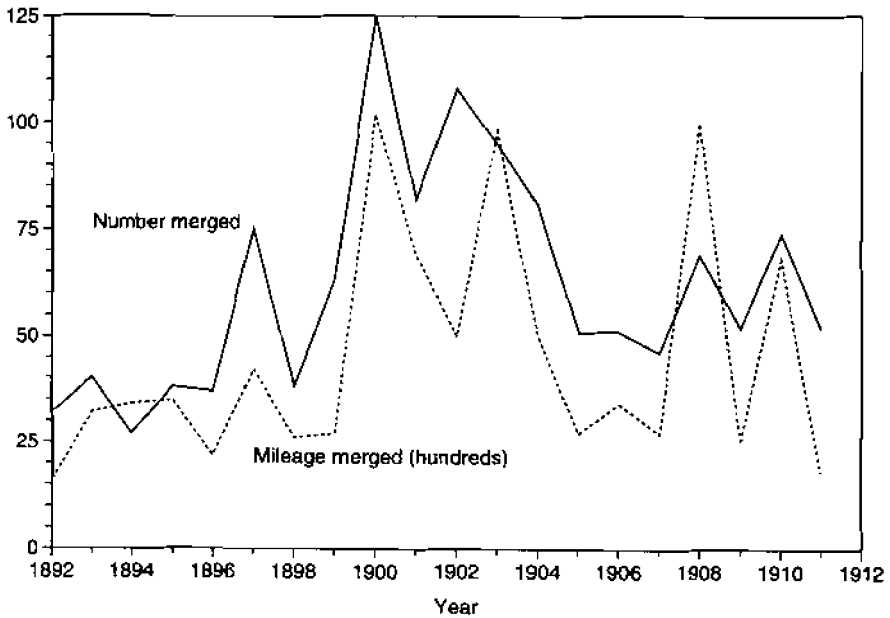

Figure 4–5 Railway mergers in the United States. (*Source:* Adapted from Ripley 1912.)

Industry *structure* changed significantly around the beginning of the twentieth century, as mergers reached an all-time high. Now railroaders began to believe that huge, interregional networks had the best chances of survival. Hence firms that faced significant competition were likely to merge. The industry became increasingly divided into generalist organizations serving important intercity routes and noncompetitive specialist lines that served remote destinations or relatively minor cities. The population size rose through much of the period, but by 1920 it had begun to decline (see Figure 4-4). More importantly, average route mileage rose 45 percent between 1890 and 1920 despite the fact that spur lines were still being founded in much of the country. National data on holding companies are not available; however, in Massachusetts, the thirty-eight railroads that survived to 1920 were controlled by just eleven independent companies.

With the disappearance of pooling, *selection* pressures changed markedly. New federal policies led railroaders to believe that only one firm could survive in any particular intercity market. While subsequent federal policies would prevent mergers from eliminating competition, the immediate result was that railroads practiced predatory pricing in the belief that if they could not kill off their competitors, they would perish themselves. Thus mergers and acquisitions increased because the threat of imminent failure increased. In Figure 4-4 this situation is obscured between 1897, when the Court upheld anticartel and antitrust law, and 1910, by the fact that new railroads continued to be founded; however, the effect is clear between 1910 and 1920, when the number of oper-

ating railroads declined by over 200. Unfortunately, national data on foundings were not published by the Interstate Commerce Commission.

THE POLICY TUG-OF-WAR, 1920–1965

Between 1920 and 1965, U.S. rail policy upheld the conflicting goals of fostering price competition in the industry and sustaining service on every stretch of track ever built. To add to the confusion, Congress also sought to regulate rates in the rail industry to ensure "fair" competition between railroads, road transport, and air transport. The idea was to keep all forms of transport alive and viable for all possible routes. The contradiction between the goal of preserving price competition and the goal of sustaining service to all rail destinations led to a series of disarticulated policies and to great instability in the industry. The problem resulted from industry overcapacity. Federal law required railroads to be competitive, but prevented them from abandoning unprofitable stretches of track to reduce costs. The situation was exacerbated by economic crises that threatened the industry during the 1930s, at the end of the 1940s, at the end of the 1950s, and again at the end of the 1960s.

After the industry was run under strict state control during the Great War, private control was restored in 1920. In the same year the Transportation Act granted the ICC wide-ranging control over construction, abandonment of track, rates, competition, and mergers. In practice, the legislation enforced price competition while preventing firms from closing down lines that lost money—or merging where overcapacity created losses.

Between 1920 and 1965, Congress vacillated between seeking to stabilize the industry by quelling competition and seeking to protect consumers by stimulating competition. The Hoch-Smith Resolution of 1925 gave the ICC expanded investigatory powers over rate inequities to ensure that competitive rates were offered on all routes. Then the Emergency Transportation Act of 1933 gave the railroads temporary power to act cooperatively during the Great Depression. The temporary Railroad Adjustments Act of 1939 and the permanent Railroad Modification Act of 1940 gave the ICC the power to help faltering railroads survive by modifying the terms of their bonds. But then the Transportation Act of 1940, in the wake of federal regulation of motor and air transport in the late 1930s, sought to equalize and stimulate competition among different forms of transport. The Transportation Act of 1958 aimed to remedy some of these contradictions but it did not fully deregulate the industry and its ultimate effects were modest.

Antimerger Policy and Anticompetitive Strategies

Antitrust law and interstate commerce legislation combined to keep price competition alive in the industry. Between 1909 and 1956, the ICC prevented most mergers among healthy rivals. Managers responded with new kinds of associational strategies designed to quash competition. Railroads frequently used

holding companies and *stock acquisitions* to combine. For instance, the Van Sweringens put together a group of eastern railroads that included the Chesapeake and Ohio; the Pere Marquette; the New York, Chicago, and Saint Louis; the Wheeling and Lake Erie; the Chicago and Eastern Illinois; and westward, the Missouri Pacific. During the 1920s, many railroads bought large stakes in competing railroads. The Baltimore and Ohio, after being severed from the Pennsylvania under antitrust law, acquired an interest in six different railroads to control competition.

Nonetheless, *acquisition* continued to be the preferred strategy for avoiding competition. Because the ICC had a mandate to sustain service on all of the nation's railroads, it generally supported applications by strong railroads to acquire faltering lines. Formal integration thus occurred most often during periods of financial decline, and generally involved acquisitions rather than mergers. One result of the ICC's reluctance to allow mergers between still-healthy lines was that large segments of the industry were on the brink of insolvency for much of the period. Acquisitions peaked during the Depression, despite Roosevelt's suspension of antitrust policy and support for industry cooperation. Between 1929 and 1932, gross revenues declined by one half. Between 1928 and 1940, one third of America's 849 railroads disappeared (Moody's Investor Service 1992, p. a33). The ICC made every effort to broker an acquisition for each bankrupt line, in keeping with the policy of preventing the abandonment of track; however, these arrangements often had the effect of saddling a healthy company with routes that lost money.

There were very few new firms founded after 1920, and very few firms failed without being acquired; Figure 4-4 charts the number of railway firms over time and captures the pattern of consolidation in the industry. There was a steady decline in the number of firms operating the nation's rail routes between 1910 and 1970. What the decennial data do not show is the flurry of consolidations that occurred during each economic crisis, for instance, the population of railroads declined by 140, or 17 percent, between the beginning of 1929 and the end of 1932 (Moody's Investor Service 1992, p. a33).

A third business strategy was participation in the regional *rate association*. Rate associations were independent bodies that brought together the traffic chiefs of regional railroads to review proposed changes in charges and conditions of transport. Proposed changes were made known to shippers and carriers, who could then express their opinions to the associations. The courts had held that members must be able to set rates independently if they chose to, but the associations provided a way to preclude rate wars and protect revenues. The Justice Department considered these associations to violate antitrust law; however, by stabilizing the industry they made most shippers, carriers, and railroads happy and thus they engendered little opposition. In 1948, railways, regulatory agencies, and rail customers joined forces to pass the Reed-Bulwinkle Act, which legalized rate associations. The associations did not exactly fix prices, and they did not exactly preclude competition, but they did serve as a brake on incipient rate wars that might otherwise have thrown even more railroads into bankruptcy.

The Regulation of Track Abandonment

In 1920, Congress gave the ICC the authority to prevent railroads from abandoning service on existing routes. Precedent for such intervention in the operations of private firms came from the tradition of common carrier regulation. In return for charters granting service monopolies, public carriers were required to provide transport on the routes for which they held charters. This doctrine remained largely intact until 1976, and in conjunction with the industry's asset specificity, which continued to prevent the liquidation of capital, it severely constrained business strategy. Railroads were enjoined from eliminating unprofitable services except where all affected parties concurred in the abandonment. The ICC permitted the abandonment of only 25 percent (63,332 miles) of U.S. railroad track between 1920, when competition from road and air transport began in earnest, and 1969 (Keeler 1983, p. 38). By preventing the abandonment of unprofitable routes, the ICC prevented firms from adopting efficient structures that would allow them to offer truly competitive prices.

The Regulation of Competing Forms of Transport

Federal regulation of competition among air, road, and rail transport pushed railroads in yet another direction strategically. From 1940 the Interstate Commerce Commission held authority to regulate rates in the rail industry to preserve healthy competition among railroads, trucks, buses, and planes. This included the capacity to set *minimum* rates, so as to prevent prices that would drive competing forms from the market. While the legislation was successful in preventing predatory, below-cost rate setting, it had the effect of interfering with active price competition.

Of course, it is difficult to accurately estimate the importance of rate regulation and abandonment regulation on the railways' competitive position vis-à-vis other forms of transport. Some argue that public subsidies for airport and highway construction are to blame for the decline of the railroads. In any event, the railroads lost substantial ground to other sectors. Before 1920, railways had provided virtually all intercity passenger transport, and by 1950, when reliable comparative statistics became available, railroads were providing only 6 percent of intercity passenger transport and private automobiles were providing 86 percent (U.S. Bureau of the Census 1975, p. 707). Freight transport succumbed somewhat later, and to a lesser extent, than passenger transport, but railways nonetheless lost market share in freight as well.

Railroad foundings and new construction also came to a virtual halt after about 1920. During the 1910s, system builders continued to lay down new track to complete their networks, even when other roads already served the routes. Federal pro-competition policy was part of the cause. Continued construction produced substantial overcapacity, and there was increasing talk of the redundancy of routes in the U.S. rail network. Railway foundings and new construction slowed to a crawl after 1920, in part due to competition from road transport and in part due to previous overbuilding. In the forty years after World War II, there was not a single new railroad founded in the United States.

In sum, business *strategy* was increasingly politicized between 1920 and 1965, because railroad profitability and survival were so dependent on public policy. The railroads came to support federal regulation of road, rail, and air

rates because it buoyed their prices and prevented cutthroat competition. Once road transport became a viable source of competition, federal minimum rates became essential to sustaining profitability because federally set rates were based on a "fair rate of return" calculus that took railroads' required operation of unprofitable lines into account. Federal minimum rates for both trains and trucks could thus shield railroads that were handicapped by unprofitable routes from all-out price competition.

The *structure* of the industry changed as well. Rate bureaus created regional integration of a weak sort, and acquisitions of failing lines by healthy railroads led to greater consolidation. Because Washington remained committed to the principle of competition, however, end-to-end combinations that did not extinguish competition were favored over combinations between railroads that competed directly. The industry gradually became more concentrated between 1920 and 1965, as Figure 4-4 shows. The average railroad more than doubled in size.

Selection worked against railroads that had a preponderance of unprofitable routes on which they were not able to suspend service. The acquisitions that resulted from these failures produced an increasing number of exclusive rail routes. In the quarter-century after World War II, nearly one-half of *rail* freight traffic in the East was removed from competition as a result of acquisitions (Healy 1985, p. 247). Competition from other forms of transport became increasingly important in these years. Despite the fact that aggregate demand for freight service grew, rail's proportion of freight business declined significantly. Passenger service suffered even more. The number of freight cars in service declined by less than one half between 1920 and 1970, while the number of passenger cars declined by over four fifths.

A comparison with Britain illustrates the effects of American policy. While Parliament had ruled against proposed mergers as early as 1872, it had also made cartels legally enforceable in most cases. Antimerger and pro-cartel policies, taken together, led British railroads not to seek mergers but to "rely on less formal and often less stable methods of regulating competition between themselves, such as . . . pricing and pooling agreements" (Channon 1983, p. 59). While policy in both countries discouraged mergers, Britain's pro-cartel policies permitted even small railroads to stabilize prices and thereby escape bankruptcy. The result, in Britain, was a fairly stable level of industry concentration between 1870 and 1921, when the government reorganized the industry into regional monopolies. By contrast, well into the twentieth century the U.S. antimerger stance continued to prevent mergers among healthy companies, while the U.S. anticartel stance made price stabilization through associations difficult and contributed to a high rate of failure.

PARTIAL NATIONALIZATION AND DEREGULATION, 1966–1993

The Department of Transportation, founded in 1966, responded to a rail crisis in the latter half of the 1960s by orchestrating federal takeovers of intercity passenger rail service and of Northeast freight service, and by deregulating much of the rest of the industry to permit reorganization.

Partial Nationalization: Amtrak and Conrail

Increased competition from trucking caused rail's proportion of the nation's freight traffic to decline from 69 percent in 1945 to only 40 percent in 1970. In 1968, the two competing railroads that served Chicago and the Northeast were on the verge of being unable to sustain operations, and the Pennsylvania and New York Central Railroads were merged into a single company, the Penn Central. Federal approval for the merger reversed the longstanding policy of disallowing mergers that would undermine competition. Two years later, Penn Central was hemorrhaging badly and passenger losses throughout the country were putting railroads at risk of bankruptcy. Nationally, passenger services had lost money in every year since the end of World War II, and by 1970 the railroads were providing less than 1 percent of intercity passenger service (Itzkoff 1985, pp. 14–15; U.S. Bureau of the Census 1975, p. 707). Current losses in freight made passenger losses insupportable, and Congress responded by establishing the National Railroad Passenger Corporation, known as Amtrak, which began service in 1971 under a federal board of directors. In the Northeast, Amtrak took over key segments of track on the Boston-Washington corridor, but throughout most of the country it operated passenger service on privately held track. Then in 1973, Congress passed the Regional Rail Reorganization (3R) Act, establishing an agency to plan the reorganization and public takeover of freight railroads in the Northeast under Conrail.

The creation of Amtrak left regional railroads in business, but gave the federal government responsibility for its unprofitable passenger services. Conrail, which began operating in 1976, combined the operations of the Penn Central and five other railroads in the Northeast and created unified, publicly owned freight service for much of the region. Conrail only reduced the number of operating railroads by five, yet the rate of exits roughly doubled between the last half of the 1960s and the first half of the 1970s as a result of the growth of truck transport and a general economic crisis in the industry (Moody's Investor Service 1992, p. a33).

The decisions to create Amtrak and Conrail seemed to reflect Congress's recognition that the railway industry was naturally monopolistic. These particular strategies, however, departed markedly from what other countries had done when they had come to that realization. Both France and Britain had used public policy to create private regional monopolies, in 1852 and 1921 respectively. And both later created unified, nationalized, rail systems, in 1937 and 1947 respectively. Throughout the world, national governments had responded to the unique economic characteristics of the rail industry by setting rates for monopolistic private railroads, and later by nationalizing railroads. Congress has not yet fully embraced these solutions; and American policy swung away from public control after 1975.

Deregulation of Mergers, Abandonments, and Rates

After 1975, Washington sought to undo the federal regulations that had for so long tied the hands of railroad operators. The Railroad Revitalization and Regulatory Reform (4R) Act removed obstacles to mergers, abandonments, and competitive pricing. The main short-run effect of this legislation was to in-

crease merger activity. Since the beginning of the century, federal antitrust law and railroad regulation law had discouraged combinations. By altering this stand, the 4R Act permitted roads to achieve long-desired consolidation. Moreover, by facilitating the abandonment of track, the 4R Act made it possible for newly merged railways to eliminate regional overcapacity, which produced an added incentive to merge. Competing railroads could now merge and abandon one set of tracks to reduce overhead. The results were dramatic. In one year the number of operating railroads in the United States declined from 320 to 59 (Moody's Investor Service 1992, p. a33). The industry responded to the legislation by lobbying for further deregulation.

The initial deregulation had been part of an economy-wide movement that took form under the Ford administration. The trend continued under the Reagan administration in the 1980s; however, proposals to extricate the state from governance of the railways met with mixed success. The Staggers Act, which was designed to loosen controls on managerial decisions, was signed by Jimmy Carter in 1980. Railroads had favored rate regulation so long as the main effect was to sustain *minimum* rates, but once the 4R Act eliminated the rate floor, railroads had lobbied for further deregulation to eliminate the ceiling. The Staggers Act removed *maximum* rates on the majority of routes and sped up regulatory decisions over proposed rate changes.

Yet when the Reagan administration sought to further reduce the government role in railroads by ending public subsidies to Amtrak, Congress objected on the grounds that Amtrak would quickly fall into bankruptcy and discontinue intercity passenger service. When Reagan proposed the sale of Conrail to the Norfolk Southern Railroad, the Justice Department objected on the grounds that the acquisition would violate antitrust law.

In sum, *strategy* between 1965 and 1975 was highly politicized in large measure because regulation narrowly constrained traditional business strategy. Railroads lobbied for federal rules governing rail, air, and road transport. After the passage of the 4R Act in 1976, which eliminated minimum prices that had buoyed revenues, railroads lobbied for further deregulation so that they could compete aggressively for business. They subsequently sought mergers that would enable them to increase the efficiency of their holdings, and this is evident in Figure 4-4, which shows a rapid reduction in the number of operating railways during the 1970s. The effect of the deregulation of track abandonment can be seen in Figure 4-3: total rail mileage was reduced more between 1970 and 1990 than in the preceding fifty years.

The *structure* of the industry changed dramatically with the establishment of Amtrak, which decoupled passenger and freight transport by forming a federally governed passenger service monopoly. With the establishment of Conrail, a federally governed railroad came to dominate freight services on the dense network of lines in the Northeast. Industry structure changed dramatically again in the aftermath of the 4R Act, which removed most obstacles to mergers and produced a spate of consolidations. Almost overnight, the number of operating railroads was reduced by a factor of five and average operating mileage rose accordingly.

Selection also changed radically as a result of deregulation of the industry.

Throughout most of the century, railroads failed due to overcapacity that resulted from federal legislation preventing them from merging and from closing redundant routes. After 1976, railroads' hands were not tied by federal policy, and thus they could try to avoid negative selection not merely by lobbying for federal regulations that would advantage them, but also by pursuing more rational management practices.

CONCLUSION

Public policy had dramatic effects on strategy, structure, and selection in the rail industry, and those effects are best seen across a long historical time frame. The policies we take for granted today that fall under the general rubric of *antitrust* appeared in the middle of the rail industry's history. Rail history suggests that those policies did not always have the effects they are thought to have, of sustaining natural competitive conditions and efficiency. They frequently had the opposite effects. The anticartel and antitrust legislation passed at the end of the 1880s, designed to sustain competition, actually led to a wave of mergers that extinguished much competition in the industry. The antimerger policy in effect after 1920 actually prevented lines from merging to reduce inefficient overcapacity in the industry, and produced unnecessary bankruptcies and inflated rates. This evidence points to the pitfalls of presuming that public policy has neutral effects on strategy, structure, and selection. Analysts typically hold public policy constant in examining the evolution of organizations and industries, accurately presuming that many of today's industries grew under a fairly stable set of industrial policies, at least in the United States. However, consistency in the public policy environment across time should not obscure the important role that policy plays in constituting the environment.

Even before competition heated up in the industry, public policy had palpable effects on foundings and failures. During the "railway mania" of the 1840s and 1850s, entrepreneurs responded to the availability of public capital by founding hundreds of railroads. As a result, rail foundings were not stimulated by entrepreneurial interest in the industry so much as by the interest of governments in promoting economic growth. One result was that foundings and failures alike were very high, as is evident in Figure 4-1, in part because governments paid little attention to potential profitability and in part because entrepreneurs were often motivated by the hope of skimming off public funds rather than by potential profits. Mutualism had a palpable effect as small spur lines were spawned by the publicly financed construction of large trunk lines.

Then between 1870 and 1889, the policy environment changed. Public capitalization ended and state governments began to regulate unfair rates—with the effect of stimulating rate competition. Competition had played little role in failures in the previous period, but now cutthroat pricing bankrupted scores of railroads, leading first to a series of acquisitions and next to price-fixing arrangements. Weak government enforcement of cartels soon thwarted price fixing and unleashed rate wars. Resource partitioning was evident in the 1870s and 1880s, as large railroads faced tremendous competitive pressures and small specialists serving exclusive routes were shielded from competition.

With the passage of the Interstate Commerce Act in 1887 and the Sherman Antitrust Act in 1890, cartels, pools, rate discrimination, and trusts were finally outlawed, and once the Supreme Court upheld these laws in 1897, the industry underwent an unprecedented wave of mergers. Now that existing means for controlling predatory pricing were illegal, many railroads saw little choice but to merge with their competitors. Then when the government began to prevent anticompetitive mergers, railroads turned to holding companies to dampen competition.

After the Great War, policy changed again. The government assumed the power to prevent mergers, to prevent firms from abandoning track, and to regulate rates. Between 1920 and 1965, federal policy vacillated between the goal of promoting stability and the goal of promoting competition, and the result was great instability in the industry. Some policies prevented railroads from offering competitive prices. Others buoyed rail prices. Still others prevented mergers that would achieve efficiency until one partner was virtually bankrupt.

After 1965, federal policy moved away from regulation and toward nationalization. Passenger rail service was divorced from freight service and nationalized. Freight service in the Northeast was brought under federal control. However, subsequent deregulation gave remaining private railroads greater authority to reorganize by merging and abandoning unprofitable routes, and the result was a restructuring of the industry into a smaller number of large, and much leaner, railroads.

Many of the competitive forces that operate in other industries were evident in the rail industry, but in a number of cases those forces were overshadowed by public policy. In the early period, railroads won tremendous legitimacy as a result of locomotive demonstrations and government backing, and this spawned a great many foundings. But public capitalization created significant overcapacity in the industry and the antiabandonment policy in effect after 1920 prevented the industry from achieving its ideal size in terms of trackage: for many years the industry exceeded the market's carrying capacity due to these policies. Competition clearly led to a decline in the number of railroads in the United States during the twentieth century. But early pro-cartel policies prevented competition from causing firms to fail, and later price supports had the same effect: failures were dampened by public policy in 1870–1889 and 1920–1965.

Public policy has traditionally been viewed as a force that can either interfere with the operation of natural market mechanisms or reinforce those mechanisms. In this chapter we have seen that public policies largely create the conditions for competition in the first place. In the rail industry, policies established the rules of the game and altered those rules markedly at several historical junctures.

NOTE

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