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## **The Success of the Staggers Rail Act of 1980**

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## **Executive Summary**

The Staggers Rail Act of 1980 marked a dramatic change in the evolution of the U.S. railroad industry by eliminating or greatly reducing federal regulatory control over virtually every aspect of rail freight operations. The stakes in the new policy environment were huge because many industry observers feared that if the industry could not substantially increase its rate of return, it faced a real possibility of becoming nationalized. The purpose of this paper is to assess how railroads and shippers have fared after 25 years of deregulation. The evidence strongly indicates that rail deregulation has accomplished its primary goal of putting the U.S. rail freight industry on a more secure financial footing. Surprisingly, deregulation has also turned out to be a great boon for shippers as rail carriers have passed on some of their cost savings to them in lower rates and significantly improved service times and reliability. I conclude that a fully deregulated environment, which would entail elimination of residual regulation by the Surface Transportation Board, will preserve this rare win-win outcome and yield even further benefits to railroads and shippers.

# The Success of the Staggers Rail Act of 1980

Clifford Winston

## 1. Introduction

The Staggers Rail Act of 1980 marked a dramatic change in the evolution of the U.S. railroad industry. After several decades of regulatory control over virtually every aspect of their economic operations, freight operations were substantially deregulated and railroads were given the freedom to set rates (within broad limits) for the cargo they transported, abandon unprofitable routes, and consolidate with other carriers to a much greater degree than they were able to in the past.

The stakes in the new policy environment for freight operations were huge. Many industry observers feared that if the industry could not substantially increase its rate of return, it faced a real possibility of becoming nationalized. Moreover, if rail freight deregulation failed in the United States, it was unlikely that any other country would try this experiment.

Today, countries such as Canada and, to some extent, Australia have deregulated their rail systems and most other countries are considering some form of regulatory reform. Apparently, other nations have interpreted the U.S. railroad deregulation experiment as a success. What aspects of the policy worked and who benefited? What parts were less successful and who was harmed? What further steps can be taken to enhance industry performance under deregulation? The purpose of this paper is to address these questions.

## 2. The Economic Motivation for Policy Change

The Interstate Commerce Act of 1887 is the traditional starting point for rail regulation in the United States. Of course, in those days private rail companies carried passengers and freight. In 1970, passenger service was transferred to a government corporation (Amtrak) instead of being deregulated; thus, I will confine my discussion to freight operations.

Economic regulation of any industry for a long period of time causes that industry to develop a regulatory bequeathed capital structure and a provincial mindset that shapes its relations with labor and the government. Inefficient operating practices and a slow rate of

technological progress become deeply engrained in the industry as regulation persists. Deregulation therefore cannot be expected to create an efficient and technologically up-to-date industry overnight. However, it can be expected to jump-start the long-term process of dismantling the most costly aspects of regulation.

In the rail freight industry, the costs include the following:<sup>2</sup>

*Distorted prices.* Under regulation, railroad rates were in theory determined by value of service pricing, whereby rates for a given commodity were aligned with the value of the commodity rather than the cost of shipping it. Consequently, high-value manufacturing products were charged higher rates than low-value bulk commodities such as coal and grain. The rationale for this pricing scheme was that railroads were characterized by significant scale economies; thus, some form of price discrimination was necessary to enable the industry to cover its fixed costs and earn a normal profit. Indeed, it can be argued that in its inception value of service pricing was tantamount to Ramsey pricing.

Regardless of its theoretical justification, rail's regulated rate structure contributed to the industry's decline when intermodal (truck-rail) competition developed. In this environment it became clear that the demand elasticities for time-sensitive shippers of high-value commodities were higher than the demand elasticities for shippers of low-value commodities. By elevating rail rates for high-value commodities, value of service pricing helped private and for-hire motor carriers capture a large share of rail's high-value manufacturing traffic. Consequently, rail was left with a traffic mix that became increasingly dominated by low-value freight, which generated insufficient revenue to cover rail costs. Rail carriers had little flexibility to respond to competition from trucks or each other by adjusting rates for specific commodities and were prevented from negotiating long-term contracts with shippers that had the potential to benefit both parties.

In addition, rail rates were collectively subject to a rate of return constraint. During the 1970s, this constraint—roughly 2-3 percent of capital invested—was far below market rates of return, thereby preventing the industry from attracting sufficient capital to maintain its plant and equipment.

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<sup>2</sup> Two classic sources on the costs of rail freight regulation include John R. Meyer, Merton J. Peck, John Stenason, and Charles Zwick, *The Economics of Competition in the Transportation Industries*, Harvard University Press, Cambridge, Massachusetts, 1959 and Ann F. Friedlaender, *The Dilemma of Freight Transport Regulation*, The Brookings Institution, Washington, DC, 1969. Theodore E. Keeler, *Railroads, Freight, and Public Policy*, Brookings Institution, Washington, DC, 1983 provides a detailed discussion of the issues summarized here.

*Barriers to exit.* Railroads developed their vast network of track, yards, and switching facilities over several decades. During most of the period that the network was built, rail carriers recognized that they would have to compete in some regions of the country with barge transportation for shippers' bulk commodities but they did not envision that they would have to compete with truck transportation for shippers' freight. The construction of the interstate highway system turned motor carriers into formidable competitors and ensured that the nation's rail network would no longer transport the volume of traffic that it was designed to carry.

However, regulation was not reformed to fit the changing times as railroads were prevented from abandoning parts of their network that ceased to be economical. Instead, common carrier obligations forced rail carriers to maintain their network even in situations where it was unprofitable for them to do so.

*Labor utilization.* In many industries, labor relations evolve through a series of voluntary negotiations. Sometimes an industry must endure a strike but presumably after the strike is resolved, the industry and labor develop a better understanding of how to settle their differences. Because of the importance of rail service to the nation's economy, the federal government has tended to block strikes and forced labor, represented by strong unions, and management to submit to compulsory arbitration.

As pointed out by Keeler, under regulation there was little progress on instituting work rules that would enhance productivity and on setting wages that would reflect productivity. For example, freight train crews were paid for a full day's work for 100 miles of travel, even if that distance entailed less than a day's work. In addition, firemen were still required on locomotives even after locomotives were powered by diesel fuel. Generally, the industry was saddled with excess labor that was paid higher wages than it would be paid in a competitive market.

*Technological Progress.* The railroad industry's poor record of technological advance under regulation was also a source of its financial difficulties. The combination of regulatory constraints on behavior and the lack of economic incentives deterred the industry from improving its operations and offering new services to shippers. For example, shippers frequently voiced dissatisfaction with the unreliability of railroad service. When they would ask carriers for information about the location of a shipment and when it might arrive at its destination, carriers could not offer a satisfactory reply. Indeed, during the regulated era, Norfolk Southern tracked

its cars and locomotives by the primitive expedient of posting a video camera at the entrance of each rail yard.

The potential for introducing larger, more specialized freight cars represents a classic example of how rail regulation stifled innovation.<sup>3</sup> An innovation in car design would increase the hauling capacity of the equipment, but the car would cost more to purchase. To exploit the innovation, a railroad might want to induce volume by lowering rates for the intended traffic, but the Interstate Commerce Commission could, and in practice often did, oppose the new rate. Presumably, this opposition was motivated by the desire to protect rail carriers that did not invest in larger carrying capacity, thus discouraging other carriers from investing in new types of rail cars. Such episodes were common in the railroad industry, leading the Task Force on Railroad Productivity to conclude during the early 1970s that lapses in railroad technology were a primary explanation of why total productivity in the rail industry had grown at a rate averaging only 1 to 2 percent per year while other U.S. industries' annual total productivity growth averaged 2 to 3 percent.<sup>4</sup>

The inefficiencies created by rail regulation put a stranglehold on the industry that prevented it from competing effectively. Rail's share of freight traffic, which stood at nearly 70 percent of intercity ton-miles following World War II, fell to 37 percent by 1975. Moreover, following the bankruptcies of several Northeastern and Midwestern railroads in the 1970s, nearly every remaining railroad was earning a rate of return below that earned in the corporate sector as a whole. Policymakers were increasingly convinced that the industry needed much greater pricing and operating freedom if more bankruptcies were to be avoided; hence, in 1980, Congress passed the Staggers Rail Act to deregulate the railroads in a direct unambiguous fashion. In short, the Act directed the industry to return to profitability by relying on the market.

Policymakers believed that deregulation would help the railroads return to profitability, but they were concerned that railroads might exercise market power and charge some shippers exorbitant rates. Indeed, some academic predictions of the effects of rail deregulation were

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<sup>3</sup> This example is discussed by Aaron Gellman, "Surface Freight Transportation," in *Technological Change in Regulated Industries*, William M. Capron, editor, Brookings, Washington, DC, 1971, and Robert E. Gallamore, "Regulation and Innovation: Lessons from the American Railroad Industry," in Jose A. Gomez-Ibanez, William B. Tye, and Clifford Winston, *Essays in Transportation Economics and Policy: A Handbook in Honor of John R. Meyer*, Brookings Institution, Washington, DC, 1999.

<sup>4</sup> Task Force on Railroad Productivity, *Improving Railroad Productivity: Final Report of the Task Force on Railroad Productivity*, A Report to the National Commission on Productivity and the Council of Economic Advisors, Washington, DC, 1973.

based on shippers having to pay higher rates.<sup>5</sup> Thus, although contract rates were completely deregulated, tariff rates for certain commodities were still subject to maximum rate “guidelines.”<sup>6</sup> But, as we shall see, one of the major surprises of rail freight deregulation is that railroads *and* shippers benefited from the policy—with the rate guidelines deserving virtually no credit for this outcome.

### **3. The Effects of Rail Freight Deregulation**

In general, an industry’s adjustment to deregulation is shaped by the increased operating freedoms and intensified competition that force it to become more technologically advanced, to adopt more efficient operating and marketing practices, and to respond more effectively to external shocks. As noted, inefficiencies in the railroad industry developed over several decades, so it is going to take considerable time for the full effects of deregulation to be realized. In addition, as rail carriers continue to adjust to deregulation, the full costs of regulation will be better understood because the innovative and entrepreneurial activity that regulation suppressed will become more apparent.

Competition in intercity freight markets occurs at the route level—as defined by a specific origin and destination. In the United States, the alternative freight modes include railroads, motor carriers, and, in some markets, barge transportation (air freight has a small share of traffic). Thus, from a shipper’s perspective, the intensity of intra and intermodal competition at the route level is far more important than the number of railroads at the national level.

Following deregulation, no large railroad entered the industry, while the number of railroads at the national level declined substantially as carriers consolidated through end-to-end (vertical) mergers and parallel (horizontal) mergers. As discussed shortly, these mergers had beneficial effects on shippers and railroads.

The extent of merger activity is exhibited in table 1 by rail carriers that provided service in 1984 but subsequently merged with another carrier. The absorption of Conrail by Norfolk

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<sup>5</sup> See, for example, Richard C. Levin, “Railroad Rates, Profitability, and Welfare under Deregulation,” *Bell Journal of Economics*, vol. 12, Spring 1981, pp. 1-26.

<sup>6</sup> The Surface Transportation Board—the successor to the Interstate Commerce Commission—was given the authority to determine the legality of rates in accordance with maximum rate guidelines. Under these guidelines, shippers can challenge a rate if it exceeds 180 percent of variable costs and if the railroad in question has no effective competition.

Southern and CSX in 1999 left the United States with four large (Class I) railroads—Norfolk Southern and CSX in the East, and Burlington Northern-Santa Fe and Union Pacific-Southern Pacific in the West. But competition among these remaining railroads has become extremely intense. In addition, since deregulation, the number of smaller low-cost (nonunion) railroads, such as Montana Rail Link, has increased substantially; these railroads have formed small systems from track purchased from large railroads. Finally, railroads must compete fiercely with deregulated motor carriers. Deregulation of trucking, effectuated by the 1980 Motor Carrier Act, spurred the development of advanced truckload carriers that are very formidable competitors because of their low costs and superior service.

### **Effects on rail profitability**

Railroads had to significantly reduce their costs to improve financial performance. This was accomplished in several ways. First, deregulation gave railroads the freedom to negotiate contract rates. Today, more than half of all rail traffic moves at such rates. Contract rates allowed railroads to tailor their services to shippers' preferences and for both parties to share the resulting gains in productivity. For example, shippers who required service to and from a given destination would receive a reduced rate because they eliminated an empty backhaul (i.e., excess capacity) for the railroad. Similarly, shippers who required a unit train to transport large shipments would receive a reduced rate because they helped exhaust economies of traffic density.

Rail improved the efficiency of its network by abandoning thousands of miles of unprofitable low-density lines and eliminating duplicate track in the wake of various parallel mergers. These mergers also enabled rail carriers to choose the most efficient parallel line to keep in the network. Since deregulation, rail's track miles have fallen from 270,000 to 170,000 and its traffic density (measured by millions of ton-miles per mile of track) has increased from 3.4 to 8.9.<sup>7</sup> Railroads also cut costs by eliminating cabooses and related crew members. Bitzan and Keeler estimate that these actions led to annual industry cost savings of \$2 billion to \$3.3 billion.<sup>8</sup>

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<sup>7</sup> These figures are from *Railroad Facts* (2003 edition), Association of American Railroads, Washington, DC.

<sup>8</sup> John D. Bitzan and Theodore E. Keeler, "Productivity Growth and Some of Its Determinants in the Deregulated U.S. Railroad Industry," *Southern Economic Journal*, vol. 70, October 2003, pp. 232-253.



**Table 1**  
**Major Railroad Consolidations Following Deregulation**

<b>Carrier Acquired</b>	<b>Ultimate Acquiring Carrier</b>
Atchison, Topeka & Santa Fe	Burlington Northern
Baltimore & Ohio, Chesapeake & Ohio, Seaboard Coast Line	CSX
Chicago & Northwestern, Denver, Rio Grande & Western, Missouri-Kansas-Texas, Missouri Pacific, Southern Pacific, Saint Louis-Southwestern	Union Pacific
Norfolk & Western, Southern Railway System	Norfolk Southern
Grand Trunk & Western, Illinois Central Gulf	Canadian National

With billions of dollars of sunk, long-lived capital investments, railroads were not immediately able to replace old technology with new technology. Nonetheless, deregulation gave railroads the freedom and incentive to make some important operational and technological improvements that raised service quality and reduced costs. Some of these changes included the greater use of intermodal operations, the introduction of unit trains for coal and grain, the development of double stack rail cars for manufactured commodities, and the further application of computer information systems to track shipments and route cargo. The video cameras that were once placed in rail yards to monitor freight cars were replaced with electronic scanners that automatically recorded each car's arrival.

Gallamore points out that as rail's cash flow improved it was also able to upgrade its technology and replace its worn out capital.<sup>9</sup> For example, railroads revitalized their plants with stronger and better-maintained track that reduced train derailments and cut the time that track is taken out of service for rebuilding. Rail carriers also acquired newer, larger, and more reliable locomotives to handle the growth in traffic.

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<sup>9</sup> Gallamore, "Regulation and Innovation: Lessons from the American Railroad Industry."

Collectively, the changes in rail operations and technology spurred by deregulation enabled the industry to substantially cut its costs. As shown in Figure 2, real operating costs per ton-mile have fallen steadily, and as of 2002, were 69 percent lower than when deregulation began. Of course, some of the cost decline can be attributed to the long-run trend in rail's traffic mix to include a greater proportion of low-cost bulk traffic. On the other hand, Keeler and Bitzan document that railroads have accrued large cost savings from productivity growth that has continued to accelerate since deregulation; thus, deregulation's contribution to observed cost declines is substantial.

In addition to reducing its costs, the rail industry has also increased its traffic. After reaching a postwar low in the mid-1980s, originating rail carloads have grown from 19.5 million in 1985 to 27.9 million in 2002.<sup>10</sup> During this period, its share of intercity freight, measured in ton-miles, increased from 37 percent to 40 percent. The combined result of the cost savings and increased output is that rail profitability has significantly improved since deregulation. During 1971-80, the industry's return on equity averaged less than 3 percent; during the 1990s the industry's return on equity has averaged 10.7 percent a year.<sup>11</sup>

### **Effects on Shippers**

The evidence that I have presented substantiates that rail deregulation accomplished its primary goal of putting the U.S. rail freight industry on a more secure financial footing. Policymakers were less certain about how shippers would fare under the new policy and, as noted, introduced some safeguards to protect so-called "captive" shippers from being exploited. Surprisingly, deregulation has turned out to be a great boon for shippers. Given the intensity of competition in surface freight transportation, rail passed on some of its cost savings to shippers in lower rates. As shown in Figure 3, real rail rates have declined since deregulation. Thus far, real rail rates have fallen 65 percent. Some of the decline in rail rates, like the decline in rail costs, can be attributed to the long-run trend in railroads' traffic mix to include a greater proportion of lower-priced bulk traffic but deregulation's contribution has been substantial. For example, Ellig surveys evidence from various sources and concludes that at least one-third, and

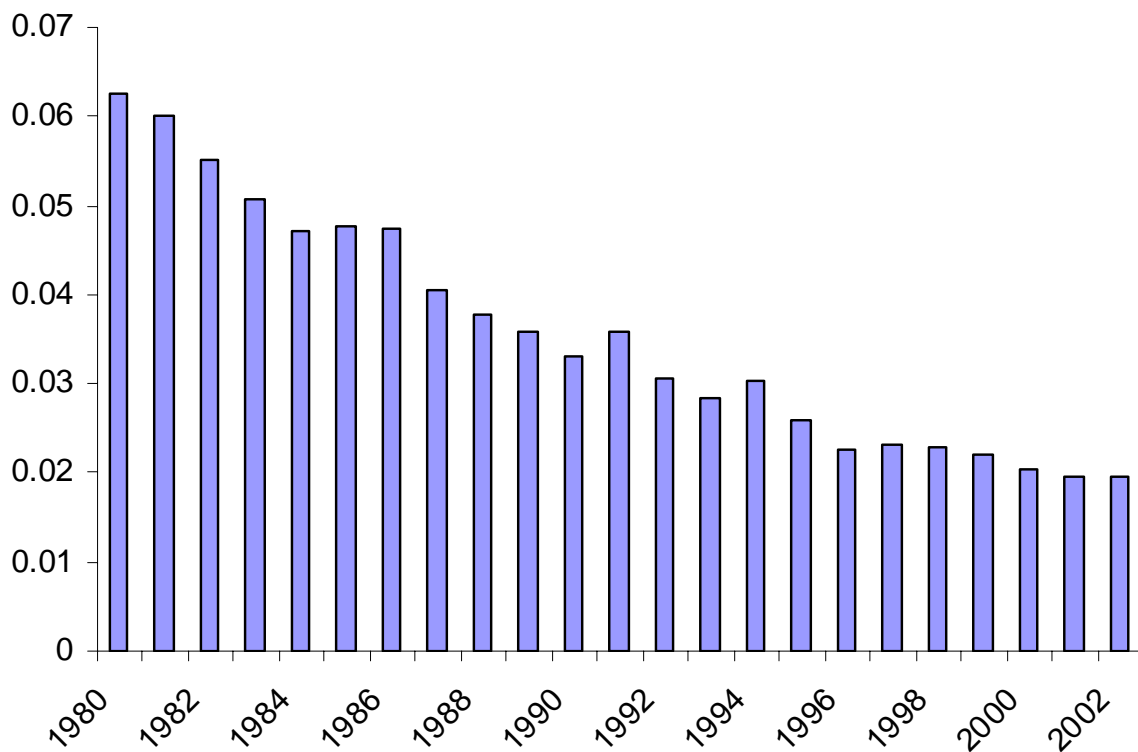
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<sup>10</sup> *Railroad Facts* (2003 edition), Association of American Railroads, Washington, DC.

<sup>11</sup> General Accounting Office, *Railroad Regulation: Changes in Railroad Rates and Service Quality since 1990*, GAO/RCED-99-93, April 1999.

possibly much more, of the rate reductions since 1980 can be attributed to the Staggers Rail Act. As a baseline estimate, this implies that deregulation has, on average, lowered shippers' rates more than 20 percent.<sup>12</sup>

**Figure 2**  
**Railroad Operating Costs per Revenue Ton-Mile, 1980-2002**  
 (2002 dollars)



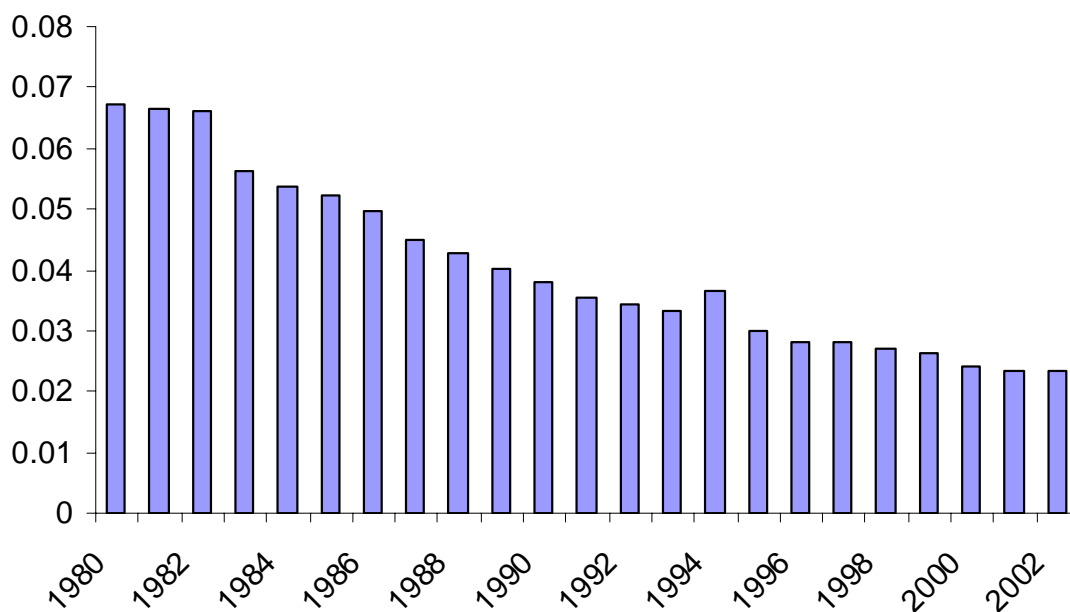
Source: Association of American Railroads (1993, 2000, 2003)

To be sure, shippers have not benefited equally. Large rail shippers in high-density markets have been able to negotiate lower rates than small shippers in low-density markets, but

<sup>12</sup> Jerry Ellig, "Railroad Deregulation and Consumer Welfare," *Journal of Regulatory Economics*, vol. 21, pp. 143-167, April 2002.

small shippers have been able to increase their rate savings by obtaining lower rates through third-party logistics firms that represent a group of shippers in their negotiations with railroads. As shown in table 2, shippers of all commodity groups have benefited from declines in their rates, although some shippers have gained more than others. It is striking that coal shippers, who are thought to have more captive traffic than other shippers, have experienced the largest rate declines during the 1990s.

**Figure 3**  
**Railroad Freight Revenue per Ton-Mile, 1980-2002**  
 (2002 dollars)



Source: Association of American Railroads (1993, 2000, 2003)

During regulation, rail's slow transit time and its unreliability were a serious problem in an economy that was becoming more service oriented. Indeed, the competitive advantage of trucking largely stemmed from its ability to offer much faster and more reliable service that, for example, facilitated just-in-time inventory practices. Following deregulation, rail greatly improved its service, partly through end-to-end mergers that reduced the frequency with which an originating rail carrier had to switch its cars to another railroad to complete the movement.

Based on the first decade of deregulation, one study found that the annual benefits to shippers from lower rates and improvements in service time and reliability amounted to at least \$12 billion (1999 dollars).<sup>13</sup> In all likelihood, these benefits have grown as rail has continued to improve its operations and lower its costs.

In sum, rail deregulation turned out to surprise policymakers by evolving into a rare “win-win” outcome for consumers and industry. And this outcome has been achieved while rail’s overall safety record has continued to improve.<sup>14</sup> Not surprisingly, the gains have come at some expense to labor in the form of reduced employment but not in lower wages.

#### **4. The Intensity of Rail Competition**

The benefits to shippers from deregulation may be surprising in light of the substantial industry consolidation that began in the early 1980s, leaving many shippers with at most two rail carriers to compete for their business. Why is that sufficient intramodal rail competition?

Rail competition may arise in several ways. Two railroads can compete directly for a shipper’s traffic if their tracks traverse directly into the shipper’s plant or if they have access to the shipper through reciprocal or terminal switching.<sup>15</sup> However, shippers who are captive to one railroad may also benefit from *locational* competition supplied by a nearby carrier. For example, a shipper may be served by Railroad A but threaten to locate a new facility on or build a spur line to Railroad B as a bargaining chip to obtain a lower rate from Railroad A or to get Railroad B to commit to a reduced rate. Shippers could also stimulate railroad competition in some cases through *product* or *geographic* competition. For example, an industrial site served only by Railroad A in a given market may be able to use a substitute product shipped from a

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<sup>13</sup> Clifford Winston, Thomas M. Corsi, Curtis M. Grimm, and Carol A. Evans, *The Economic Effects of Surface Freight Deregulation*, Brookings Institution, Washington, DC, 1990.

<sup>14</sup> Ian Savage, “The Economics of Commercial Transportation Safety,” in Jose A. Gomez-Ibanez, William B. Tye, and Clifford Winston, *Essays in Transportation Economics and Policy: A Handbook in Honor of John R. Meyer*, Brookings Institution, Washington, DC, 1999 reports that the rate of derailments and collisions and fatality rates for employees and at crossing facilities have declined since deregulation, although fatality rates for trespassers have slightly increased.

<sup>15</sup> Graphical characterizations of these situations are presented in Curtis M. Grimm and Clifford Winston, “Competition in the Deregulated Railroad Industry: Sources, Effects, and Policy Issues,” in Sam Peltzman and Clifford Winston, editors, *Deregulation of Network Industries: What’s Next?*, Brookings Institution, Washington, DC, 2000.

different origin by Railroad B, or the site could obtain the same product from an alternative origin served by Railroad B.

**Table 2**  
**Average Change in Real Rail Rates for**  
**Selected Commodities, 1982-96**

<b>Category</b>	<b>Average annual percentage change in rail rates</b>	
	<i>1982-89</i>	<i>1990-96</i>
All commodities	-4.6	-4.1
Farm products	-6.7	-1.1
Metallic ores	-5.2	-5.2
Coal	-3.3	-7.9
Food and kindred products	-6.9	-3.7
Lumber and wood	-6.2	-4.0
Chemicals	-3.9	-2.4
Petroleum and coal products	-5.6	-3.0
Stone, clay, glass and concrete	-5.5	-0.5
Transportation equipment	-2.4	-2.5
Intermodal	-5.8	-2.9

Source: General Accounting Office (1999).

Such sources of competition are not simply theoretical possibilities. Grimm and Winston found, for example, that a shipper located 50 miles from another railroad pays roughly 16 percent less in annual freight charges than a shipper located 100 miles from another railroad. They also found that receivers who can be served by two or more railroads from different origins enjoy a 25 percent rate reduction from average charges.

## 5. Some Remaining Issues

Although the rail freight industry has been largely deregulated, government's oversight has not been completely eliminated. To be sure, the Surface Transportation Board's interventions are limited to a relatively small number of rate cases. But given the legacy of government intervention in this industry, rail carriers' and shippers' instincts are to engage with the Board and Congress to protect and possibly expand their gains from deregulation.

The rail industry is quick to point out that notwithstanding the improvement in its financial performance, it is not revenue adequate. That is, as shown in Table 3, railroads' return on investment still falls short of their cost of capital. Thus, the railroads argue that the Surface Transportation Board should refrain from trying to appease captive shippers by either concluding that rail rates are excessive or by supporting a policy of forced access to increase rail competition.<sup>16</sup>

Shippers, and various organizations that represent them, complain that rail rates are not always reasonable and that the Surface Transportation Board's rate complaint process is time-consuming, costly, and complex. Hence, few rates are successfully challenged. In addition, shippers have experienced widely publicized service disruptions in the wake of Union Pacific's merger with Southern Pacific and following Norfolk Southern's and CSX's acquisition of Conrail.

The ongoing dispute between captive shippers and railroads should not mar the fact that deregulation has been very good for both parties. Indeed, government intervention at this point of the industry's adjustment to deregulation would be unwise. As noted, coal shippers have experienced declines in their rates. Furthermore, Grimm and Winston find that the loss to captive shippers of any commodity from elevated rates, as compared with the rates paid by noncaptive shippers, is small.<sup>17</sup> Indeed, it can be argued that even with this loss, captive shippers

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<sup>16</sup> Rail's claim that it is not revenue adequate is not without controversy. Rail's large sunk costs and other capital assets complicate efforts to estimate the industry's financial health; thus, the figures in the table should be viewed with caution.

<sup>17</sup> They estimate that captive shippers pay rates that are roughly 20 percent higher than rates paid by noncaptive shippers, which results in a \$1.3 billion (1998 dollars) loss to captive shippers and a deadweight loss associated with this transfer of only about \$60 million. The latter is consistent with the view that exchange governed by contracts is generally efficient.

still pay lower rates than they paid under regulation.<sup>18</sup> Thus, in my view government should not pursue policies such as mandatory access to increase competition. Instead, it would be preferable to eliminate the Surface Transportation Board and completely deregulate rail rates while instituting market-based mechanisms to address the captive shipper issue. In the process, the potential for policymakers to adopt measures that effectively re-regulate the industry would be foreclosed.

**Table 3**  
**Revenue Adequacy of Class I Railroads, 1990-97**

Percent			
Year	Return on investment	Cost of capital	Degree of revenue inadequacy
1990	8.1	11.8	-3.7
1991	1.3	11.6	-10.3
1992	6.3	11.4	-5.1
1993	7.1	11.4	-4.3
1994	9.4	12.2	-2.8
1995	6.9	11.7	-4.8
1996	9.4	11.9	-2.5
1997	7.6	11.8	-4.2

Source: General Accounting Office (1999). Return on investment is based on the Surface Transportation Board's methodology for determining revenue adequacy. These returns may not be the same as returns calculated for nonregulatory purposes.

To achieve this outcome, shippers and railroads should be prodded to negotiate an end to the STB and residual rate regulation. Freed from the Board's oversight, limited as it may be, railroads could focus completely on improving the efficiency of their operations in a less politically charged environment. Shippers would no longer be frustrated by an agency that seems oblivious to their concerns. Moreover, shippers and railroads could extend the benefits they have already achieved through contractual negotiations by achieving additional logistics

<sup>18</sup> As noted, deregulation has reduced rates, on average, more than 20 percent, which exceeds the amount that rates are elevated for captive shippers as compared with the rates paid by noncaptive shippers.



efficiencies as partners, instead of quibbling over the distribution of an ever-shrinking pie as adversaries.

## **6. Final Comments**

As stressed throughout the paper, deregulation is a long-term process. U.S. railroads' adjustment to their new economic freedoms, while time-consuming, has raised shippers' welfare and restored financial health to an industry that was on the verge of collapse. Shippers have also played an important role in deregulation's success by negotiating aggressively with railroads to obtain price-service packages that optimize their distribution requirements.

It may be surprising to some that railroads have needed more than twenty-five years to adjust to their new environment—but after one-hundred years of regulation they clearly need more than twenty-five years to become fully efficient. In fact, railroads still have a ways to go to optimize service times and reliability, to be fully responsive to shippers, and to achieve potential logistical and operational efficiencies. I have suggested that a fully deregulated environment will spur the additional adjustments that the industry must make to accomplish these goals.

The industry's structure has also not fully adjusted to deregulation. It is possible that more rail mergers will be proposed until only two (highly efficient) Class I railroads remain in the industry. The end-to-end restructuring, should it come to pass, would create two transcontinental railroads but still leave two large railroads in the East and two in the West, and thus have little effect on competition. Indeed, this may be the final equilibrium for the evolution of the U.S. rail freight industry. More importantly, it is likely to result in an industry that contributes mightily to the efficiency of the nation's distribution system for years to come.